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THE EU COHESION POLICY AND HEALTHY NATIONAL DEVELOPMENT: MANAGEMENT AND PROMOTION IN UKRAINE

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THE EU COHESION POLICY AND HEALTHY NATIONAL DEVELOPMENT: MANAGEMENT AND PROMOTION IN UKRAINE

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Edited by Nataliia Letunovska, Liudmyla Saher, Anna Rosokhata

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The monograph focused on the specifics of the principles of the EU Cohesion Policy implementation. The authors conducted an analysis of the economic, ecological and social aspects of the integration of the EU experience into the state policy of Ukraine. The monograph summarizes approaches to the restoration of the country and healthy development. Particular attention is paid to the issues of health care system management, the trends and prospects of achieving the state of resilience of the medical and social provision system of the population in the context of the impact of COVID-19 on the national economy. The experience of using marketing and innovative technologies in the context of healthy national development is summarized.

The monograph is generally intended for government officials, entrepreneurs, researchers, graduate students, students of economic, medical, and other specialties.

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Introduction

Health is the most important need of a person, which determines ability to work effectively and ensures the harmonious development of the personality. The availability of European experience in solving issues of healthy development at the level of countries and regions, which significantly improves the socio-economic situation, determined the nature and subject of research in this collective monograph, which includes consideration of such issues as reforms in Ukraine, taking into account developments in the EU cohesion policy, analysis of the economic, environmental and social aspects of Ukraine's integration into the EU, recovery and cohesion in the conditions of martial law, issues of managing the health care system in Ukraine and abroad, and aspects of marketing and innovative technologies in the context of healthy development.

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Chapter 1
EU COHESION POLICY AND NATIONAL DEVELOPMENT REFORMS OF UKRAINE: COMMON VECTORS OF DEVELOPMENT

1.1. Conceptual foundations of EU cohesion policy formation: lessons for Ukraine

Forming a united state in social, humanitarian, economic, ecological, security, and spatial dimensions is the primary strategic goal of the State Strategy for Regional Development for 2021-2027 (from now on the Strategy), adopted in 2020 by the Cabinet of Ministers of Ukraine. Therefore, studying the conceptual foundations and practical consequences of the EU cohesion policy, considering experience in the formation and policy implementation in the EU countries, is a crucial stage of studying this issue in Ukraine. Implementing the EU cohesion policy determines the completeness and reliability of information about the tools' effectiveness in the conditions of appropriate resource and institutional support the European Commission provides. The cohesion policy's conceptual and theoretical basis in the domestic scientific space still needs to be formed and generalized. In addition, in the absence of the application practice of the cohesion policy in Ukraine, there is no empirical data that would allow us to justify the issue of choosing a practical toolkit for this policy and assess its application's effectiveness in Ukraine. Therefore, scientific research mainly focuses on analyzing the European experience and the practical results of cohesion policy in individual EU countries. Nevertheless, the study of both the conceptual and theoretical foundations of the application of the European cohesion policy leaves open the question of forming a proven theoretical and conceptual basis for choosing a practical toolkit of the territorial cohesion policy specifically for Ukraine. The formation of the territorial cohesion concept is devoted to the works of several foreign scientists, in particular: R. Camagni (Camagni, 2008), A. Faludi (Faludi, 2004; Faludi, 2013), E. Medeiros (Medeiros, 2016, 2018), J. Shout and A. Jordan (2007), G. Marchis (Marchis, 2014), J. Martinico (Martinico, 2007), M. Jouen (Jouen, 2009), K. Böhme and E. Gløersen (Böhme & Gløersen 2011), D. Rauhut and A. Humer (Rauhut & Humer,

2020) and others. Some attempts aimed at studying the social aspects of cohesion as a category of public administration were made by such domestic scientists. as: A.M. Grinenko and V.V. Kirilyuk (Grinenko & Kirilyuk,(2016)., O. Deineko (Deineko, 2021), O. Orzhel (Orzhel, 2012). The work of V. Zakharchenko (Zakharchenko, 2020), S.A. Davimuka, V.S. Kuybida and L.I. Fedulova (Davymuka et al, 2019), and other scientists are devoted to the issue of highlighting cohesion as an aspect of the new regional policy. A significant step towards the study of implementing the forming policy of a cohesive state within the framework of regional development strategies, with the provision of practical recommendations for the performance of the cohesion priority at the national and regional levels, was made in the report of Ya. Zhalilo within the mentioned National Platform "Dialogue on Peace and Safe Reintegration" (Zhalilo Ya., 2020). In addition, the conceptual principles and practical aspects of the implementation of the EU cohesion policy are partially disclosed in the documents of the European Commission (CEC, 2001; CEC, 2004; CEC, 2007; CEC, 2008; CEC, 2010; CEC, 2014; CEC, 2017; CEC, 2022), forming the basis of research in this matter for Ukrainian scientists.

In modern understanding, cohesion policy as a regional policy direction has three main components: social, economic, and territorial (spatial). At the same time, if the measurement of the economic and social components of cohesion was and is publicly available in the presence of simple quantitative indicators (GDP indicators, the level of employment/unemployment, the level of production productivity - for economic cohesion; indicators of the level of education, health care, social protection of the population - for social cohesion), the methodical and methodological toolkit for assessing territorial cohesion was developed during the last decade, starting in 2013, within the framework of the corresponding particular program for the development of indices and indicators of territorial cohesion – INTERCO, implemented by the European Group for Territorial Cooperation – ESPON (European Spatial Planning Observation Network) (ESPON, 2018).

1. The historical context of the cohesion policy formation in the EU.

Achieving one of the main goals of the cohesion policy is on the agenda in Europe due to the need to reduce regional disparities among the member states of the European Economic Community (which, after the creation of the European Union in 1993, was renamed the European Community) within the framework of the international agreement - the Single European Act in 1986. At the same time, in the context of the

document mentioned above, the member states of the European Community showed more differences in political interests than tendencies towards a more effective concentration of regional policy funds. Therefore, the allocation of funds was more of a political nature than an economically justified one (Neal,2008).

Since 1988, cohesion policy has received a new impetus due to the reform of the Structural Funds, which the Committee carried out for the Study of the Economic and Monetary Union under the leadership of Jacques Delores. The existing Structural Funds at that time were reformed and reduced in number. Changes in the vector of EU regional policy in the direction of the paradigm of new regionalism, the impetus for which was the reform of the Structural Funds, were expressed in the following practical terms:

- The principle of "programming", which practically means the implementation of long-term financial plans. Thanks to the replacement of the annual budgets of supranational funds with 7-year budgets, the preservation of financing of long-term projects was ensured, eliminating the threat of a shortage of funds or changes in political vectors, which contributes to the improvement of the investment climate (Bachtler & Mendez, 2007).

- The principle of "partnership". Transfer of the cohesion policy from the national to the regional level. Therefore, the reasons for the countries' economic backwardness began to be considered from the standpoint of the geographical position and (or) structure of the economic complex of a separate region. And, not as before, to be determined by the features of the economic state complex or the state institutions' weakness. In addition, using a targeted approach in distributing funds of the EU Structural Funds made it possible to distribute them more effectively when the funds were allocated not to countries as a whole but to individual regions.

- The principles of "additionality" and "co-financing" were confirmed as key features of the Structural Funds. Thus, the EU Structural Funds cannot replace the member states' funds, while the EU member states are obliged to provide up to half of the funds (depending on the purpose) required for programs and projects eligible for structural support.

- Granting the right to choose at the level of the EU member states governments those regional projects and programs that require financing, as well as the abolition of quotas on the amount of aid to the EU member states. At the government level, countries receiving financial assistance are entrusted with monitoring the use of funds by ensuring compliance and

mutual consistency of sectoral policies and programs, spreading innovations throughout the EU, and ensuring the effectiveness of a targeted approach to projects in specific territories (Vdovichen & Kruglyanko, 2015).

In 1989, the first meeting between the ministers of the EU countries responsible for spatial development and territorial planning took place, which started the process of cooperation, the final result of which is the document called The European Spatial Development Perspective - ESDP - this is a document approved by the informal Council of Spatial Planning Ministers of the European Commission in Potsdam in 1999 (EC, 1999). This legally non-binding document formed a policy framework with 60 policy options for all levels of government, emphasizing the degree of responsibility for planning. The strategic goal of the ESDP was the achievement of the balanced and sustainable spatial development of the EU, the implementation of which takes place by ensuring the achievement of three main goals, namely:

1) economic and social cohesion.

2) conservation and management of natural resources and cultural heritage.

3) more balanced competitiveness of the European territory.

In particular, three political guiding principles of spatial development were formulated, which were embodied in the development of 60 detailed policy options, in particular:

- a balanced and polycentric urban system and new city and countryside relations.

- parity of access to infrastructure and knowledge.

- sustainable development, wise management, and protection of nature and cultural heritage. The bold message of the ESDP was that "territory matters", reiterated and deepened in subsequent discourse, leading to the EU's Territorial Agenda and the Concept of territorial cohesion.

During the 1990s and the beginning of the new millennium, some of European society's fundamental values, political goals, and political strategies were renegotiated and modified. It happened in the context of (and as a result of) increased globalization, economic recession, unemployment, and the dynamic development of Internet technologies at the turn of the century, new political awareness of climate change, energy supply problems, demographic changes, and growth, and, of course, in the context of the EU enlargement by twelve new member states.

With the entry into force of the Maastricht Agreement in 1993, a new instrument was formed - the Cohesion Fund. The Regulation on Cohesion Policy adopted for the period 1994-1999, which included, among other things, directions for the use of the Structural Funds under the name "Financial Instrument for Fisheries Guidance", also strengthened the rules on partnership and evaluations. Funding allocated to cohesion policy doubled and covered a third of the EU budget.

The next budget period (2000-2006) was marked by the approval (in March 2000) by EU member states of the "Lisbon Strategy", which emphasized the issues of ensuring growth, employment, and competitiveness (Collignon et al., 2005). It became the leitmotif of many EU policies and led to changes in cohesion policy toward greater emphasis on innovation (EU, 2009). This period also marked the most significant enlargement of the EU, with ten new member states joining the EU in May 2004. They added 20% to the EU's population but only 5% to its GDP. Accordingly, enlargement increased income and employment inequality across the EU, as the average GDP per capita in the new countries in terms of PPP was less than half of the current average, and only 56% of the working-age population was employed, compared to 64% - for the member states existing at that time (the so-called "EU-15").

The largest concentration of financial resources in EU history within the framework of financing the cohesion policy of the poorest member states and regions (81.5% of the total amount) took place in 2007-2013 with the accession of Bulgaria and Romania. According to Agenda 2000, "Growth and jobs", launched in 2005, a quarter of financial resources were allocated to research and innovation, and about 30% to environmental infrastructure and measures to combat climate change. Other significant changes to improve cohesion policy's effectiveness and sustainability included promoting financial instruments and creating technical assistance facilities to help Member States prepare major high-quality projects

The first mention of the territorial component of cohesion dates back to 2001 when in the Second Report of the European Commission on Economic and Social Cohesion (EU, 2001), the issue of the "territorial component of cohesion" is given a separate section (although the concept was previously mentioned in the Amsterdam Agreement in 1997 without specific clarifications of its content). In 2002, specifically, to study the problems of territorial cohesion, the European Grouping on Territorial Cooperation (ESPON) was created, which to this day continues to investigate the disparities causes in the economic and social development

of specific regions (through analysis of the environmental indicators dynamics, the size of the islands, the distance to the nearest shore). The accumulated analytical basis of ESPON for identifying the disparities causes and consequences in specific territories and, until now, served as the basis for the formation of conceptual foundations for ensuring territorial cohesion, especially for those regions that have several "weak places" at the same time (the nature of the islands, the mountainous nature of the terrain, low population density, remoteness, etc.). Since the publication of the Second Report on Economic and Social Cohesion and the creation of ESPON, the conceptual basis of territorial cohesion in the EU has been formed. It will subsequently undergo correction under the influence of actual results at certain stages of the regional programs implementation and academic work in this area. Within the framework of the Second mentioned above Report on Economic and Social Cohesion, three basic conceptual ideas of cohesion policy were laid out: 1) the gap between the core and the periphery cannot be reduced using the differentiation of production costs alone; 2) a policy aimed at strengthening ties between central and peripheral territories is better than a policy of positive discrimination (giving priority in financing the program to underdeveloped and depressed regions); 3) programs should be designed to develop a network and exchange experience with regions facing similar problems. The conclusions above are formed in the context of analysing the consequences of introducing the Single Market and the results of using the Structural Funds programs.

The Third and Fourth Reports on Economic and Social Cohesion were devoted to the question of determining the cost of regional disparities for the EU through the clarification and updating of data on the new EU member states of Central and Eastern Europe and the emergence of new peripheral growth centres (Helsinki, Dublin). In addition, the Third Report (EU; 2004) points to the coincidence of the geographical disadvantages of the territory with the combined nature of economic, technological, and social (as well as cultural) gaps. In turn, the Fourth Report (EU; 2007) does not highlight the territorial dimension of cohesion in a separate section. Still, it identifies the adverse external effects of agglomeration or urban sprawl, which occur due to the neglect of European territorial development (manifestations of which such negative phenomena as environmental degradation due to the destruction of natural territories or air pollution by transport; loss of time in traffic jams; harm to the health of the population; increase in the value of land, etc.). The Fourth Report emphasizes the

importance of supporting polycentric development, providing critical services to the surrounding rural areas, more productive and efficient public administration, and environmental protection. This Report also raises the issue of different cohesion scales, which can be considered from a small urban settlement to the EU territory.

The Fifth Report on Economic, Social and Territorial Cohesion is the first document that, expanding the scope of the "cohesion" concept in its title, recognizes the importance of the territorial dimension in ensuring cohesion. In this document, overcoming territorial disparities is associated with paying more attention to the ecological dimension of sustainable development, access to services, territorial analysis (territorial impact assessment), and territorial cooperation (allocation of functional regions). The Fifth Report (EU, 2010), which should be considered in the context of overcoming the consequences of the 2008 financial and economic crisis, contains the conclusions that, in some cases, the geographical or demographic features of the region can increase its development problems in particular, this applies to the outermost regions; the northernmost areas from the very low population density, and island, cross-border and mountainous regions, as specified in the Lisbon Agreement (EU, 2009). Analytical materials of the Fifth Report contain conclusions that although the level of regional disparities has decreased on average, in this period (comparing GDP per capita in 1996 and 2007) in several individual EU member states, there is a tendency for them to an increase that reflects the intense concentration of growth in megacities.

The Sixth Report on Economic, Social, and Territorial Cohesion promoted development and good governance in EU regions and cities (EC, 2014). The main focus of the Report is on the problems of ensuring smart, inclusive, and sustainable growth, thereby emphasizing the connection between the Cohesion Policy and the Europe 2020 strategy. A separate section of the Report is devoted to the issue of the evolution of the directions of the Cohesion Policy through a retrospective analysis of the allocation of EU Structural Funds to ensure the reduction of regional development disparities. The analysis of policy changes indicates how cohesion policy has evolved towards increasing its impact on EU objectives to ensure growth and increase the number of jobs. It also establishes how good governance is essential in ensuring its effectiveness. The report also underlines the unchanged main goal of cohesion policy - reducing economic disparities through financing less developed regions, which are

subject to less stringent requirements regarding the targeted purpose of funding, compared to more developed areas.

The Seventh Report on Economic, Social, and Territorial Cohesion summarizes how cohesion has developed in EU regions recently. It assesses the impact of national cohesion and other EU policies on this (EC, 2017). The Report also provides indicators that testify to the effectiveness of cohesion policy measures from an economic, social, and territorial point of view to provide a qualitative and objective assessment for its further adjustment in the financial period after 2020. The Report's conclusions emphasize the need to anticipate changes in the labour market, ensure investments in physical and human capital to support long-term growth and further ensure competitiveness. The Report included a particular chapter on territorial cohesion, in which the European Commission developed a new environmental dimension for territorial development. The Report states that flexible, functional regions, macro-regions, megacities, or cross-border areas should solve the problems of the entire EU (such as the transition to a low-carbon economy and reducing the negative impact of climate change). The report also highlights that improved public governance can strengthen competitiveness, promote economic growth and increase the effectiveness of investments, including those co-financed by cohesion policy. The Report emphasizes the need to ensure long-term stable and predictable investments, which, in the conditions of overcoming the consequences of the global financial crisis, both at the level of EU member states and regional and local authorities, contributes to regional development.

The Eighth Report on Economic, Social, and Territorial Cohesion, which was prepared in the context of combating the crisis consequences caused by the COVID-19 pandemic, presents an extended analysis of various trends in the policy of territorial EU cohesion during the last decade, and, as positive, and negative ones, as well as an analysis of the facts of how cohesion policy has affected these differences (EU, 2022). The report singles out "green" and "digital" transitions as new drivers of EU growth. It emphasizes the need for the mandatory use of appropriate policy measures due to the risks of new economic, social, and territorial differences**.** The crisis caused by the COVID-19 pandemic, which arose at the end of the 2014-2020 program period, made it necessary for EU member states to make changes to the regulatory and legal framework of cohesion policy to redistribute funds for the Investment Initiative in response to the needs that arose in the most vulnerable sectors of the economy, in particular: health care, SMEs and the labour market

One of the main conclusions presented in the Report is related to further directions for changes in cohesion policy in line with emerging challenges, in particular, how to ensure further cohesion improvement by integrating approaches to cohesion policy (in particular: place-based approach, which place-based; multi-level approach; and partnership-led approach) and cohesion goals into other policies and instruments. In the context of the need for pandemic consequences overcoming, the Report establishes the short-term adverse effects of the crisis caused by the disease COVID-19, which had an asymmetric impact on the EU regions due to different regional health system capabilities, constraints, and economic structures. The Report also highlights the adverse pandemic effects on critical sectors, such as tourism, where face-to-face interactions are crucial. It highlights how border regions are disproportionately affected by travel restrictions

Among the main conceptual conclusions, the Eighth Report also states the following:

- high growth rates drove convergence in less developed regions, but their advantages from low resource costs and returns on infrastructure investments may diminish over time.

- innovation is a critical factor in long-term regional economic growth. Still, the regional innovation gap in Europe has grown due to the lack of investment in R&D and the weakness of regional innovation ecosystems. Nevertheless, better dissemination of innovation at the national and regional levels can help less developed regions and regions with economies in transition to catch up.

- smart specialization strategies, which were introduced in the cohesion policy for 2014-2020, are aimed at bridging this gap but need a greater focus on identifying and developing regional potential.

- Investments in infrastructure, skills, innovation, and governance have continued to drive convergence in recent years. However, the analysis has shown gaps in development, with many growth drivers remaining concentrated in more developed regions and urban areas; however, the study found that the effectiveness of infrastructure investments depends on an appropriate regional mix of assets and a good institutional framework, as well as the macroeconomic context.

- the innovation gap is exacerbated by weak innovation and limited diffusion of human capital from international trade links and value chains. Therefore, high indicators of foreign direct investment (FDI) and exports in the region are not a guarantee of obtaining advantages for local firms and

workers in the area because of the poor acceptance of digital technologies, management practices, and Industry 4.0 technology in the business and public sectors means that many regions are not ready to take advantage of new opportunities and are vulnerable to potential threats of business relocation in case of development of value chains.

When writing the current manuscript, the EU cohesion policy has entered a new phase, New Cohesion Policy for 2021-2027, according to which new priorities and directions for ensuring cohesion for the EU have been determined. Taking into account the fact that the implementation of the current iteration of the EU cohesion policy is in the initial stage and the program period is still ongoing, it is not objective and scientifically based to make preliminary conclusions about the effectiveness of the application of specific new tools for ensuring the cohesion policy.

1.2 Conceptual basis of EU cohesion policy.

The analysis of cohesion's social and economic components is clear and uncontroversial, as these two components focus on specific elements that can be assessed and studied using available statistical indicators. The analysis of economic cohesion is mainly based on the use of the GDP indicator and the level of employment/unemployment in a particular place or space. For its part, the analysis of social cohesion uses data related to education and health issues. This means that the socio-economic analysis of cohesion is relatively simple compared to the territorial cohesion analysis. At the same time, when considering the territorial component, in the scientific and the practical plane, the analysis of the territorial cohesion effectiveness indicators, several questions arise related to the complexity and multifacetedness of the territory as an analysis subject, which is characterized by several characteristics, interrelated components, and dimensions (such as the fusion of power and social space, sovereignty, citizenship, management model and tools, etc.).

At the current stage of the development of the "territorial cohesion" concept in the academic sphere, there are two approaches to the conceptualization of cohesion policy: the first is the formation of a clear concept of territorial cohesion, by which strategic and programmatic measures of territorial cohesion policy should be formed, and the second, which involves the formation and justification components and dimensions of territorial cohesion without the need to develop a clear definition and concept of territorial cohesion.

For example, the Dutch researcher Andreas Faludi, the author of several publications on territorial cohesion, emphasizes that territorial

cohesion is related to sustainability and effective management. In addition, the same author refers to the importance of the European Spatial Development Perspective - ESDP (European Spatial Development Perspective, 1999), already mentioned in first part of the current study - to understand the territorial cohesion concept, following its main guidelines, namely by strengthening a more balanced and polycentric urban system, and by encouraging cooperation and interaction, according to A. Faludi (Faludi, 2006), territorial cohesion has a generative ability, which means the ability to reproduce differently, functioning within the existing and developing political and institutional environment. At the same time, Gareth Abrahams (Abrahams, 2014), appealing to Faludi (Faludi, 2006), Shaw and Sykes's studies (Shaw & Sykes, 2004), emphasizes that defining how territorial cohesion works (what manifestations are characteristic of it) is more important than what territorial cohesion is. Defining the functioning and action mechanism is more important than providing an exhaustive concrete definition. The cohesion concept within the framework of Shaw and Sykes 'performs' differently in different planning processes and contexts.'

At the same time, the pragmatic position of several spatial planning theorists regarding the formation of the territorial cohesion concept, in particular the honorary professor at the Center for Urban Studies of RMIT University (Melbourne, Australia) Jean Hillier, indicates that when studying such concepts as "territorial cohesion," scientists have no only ask how concepts "act" in the real world around us, but must also consider how these concepts "can act" and how they "can affect" how other concepts, practices, and material entities "act" (Hillier, 2011) .

As for the second approach to the formation of the "territorial cohesion" concept, which does not involve the need to develop a clear definition and concept but focuses on the construction and justification of the territorial cohesion's components and dimensions, it has a more institutional basis than a scientific one. The European Parliament supported this appeal for "clear and common understanding of the concept (territorial cohesion)"in a 2008 draft report, which argued that such a definition was necessary to guide policy and ensure integration between member states. It was to establish a clear concept of "territorial cohesion" and quantitative indicators of the cohesion's territorial component that several projects financed by the European Spatial Policy Observation Network (ESPON) were developed.

The first ESPON program, 2000–2006 (ESPON, 2010), aimed to complement the ESDP by examining trends and policy implications and ESDP policy implementation, objectifying effective ways to achieve its goals and options. In the framework of the first program, ESPON focuses on aspects related to current problems of the time, particularly the enlargement of the European Union and its consequences for EU politics and emphasizes two concepts: territorial cohesion and polycentrism. Both concepts are related and complement each other when considering a specific territorial approach to developing recommendations.

The second ESPON program, 2007-2013 (ESPON, 2018), aimed to implement a system of interim reports (every six months) for the ESPON network to provide processed information on new knowledge on European spatial development issues of particular interest to the Nordic countries. Within the framework of the second program, the work of specialists of the European Spatial Cooperation Observation Network - ESPON was concentrated on three main areas of research: applied research, target analysis, and development of a scientific platform. The first direction-applied research was focused on the formation of an evidence base for understanding "territorial dynamics. . . at the level of regions and cities" (ESPON, 2007). While targeted analysis aims to engage with various stakeholders, whose aim is to "take advantage of the European perspective", in particular: 2 candidate countries, Bulgaria and Romania, and two neighbouring countries - Norway and Switzerland, in territorial contexts relevant to their needs (ESPON, 2007). According to the third direction of research - the creation of a scientific platform- ESPON scientists' work was devoted to developing territorial indicators and tools for monitoring and analysing territorial cohesion between member states.

The current third ESPON 2020 Cooperation Program (hereafter ESPON 2020), which is the fourth generation of ESPON programs, has two priority areas, namely: (1) formation of the territorial evidence base, transmission, observation, tools, and coverage, and (2) technical assistance. Priority direction #1 covers the single thematic objective of the European Territorial Cohesion (ETC) Regulation and will be implemented in connection with the investment priority: institutional capacity and effective public administration. Within the framework of the ESPON 2020 program, five specific objectives have been declared that will guide (govern) the ESPON 2020 program, namely:

1. Improving the provision of the territorial evidence base through applied research and analysis.

2. Improved knowledge transfer and use of analytical support for users.

3. Improved territorial observation and tools for territorial analysis.

4. Expanding the scope and use of the territorial evidence base.

5. More compact, more efficient, and effective implementation regulations and more professional assistance in implementing the program.

ESPON 2020 focuses its activities on four research areas: (1) applied research, (2) target analysis, (3) monitoring and tool development, and (4) outreach.

To consider the spatial impacts (effects) of EU projects and policies, in 2003, ESPON launched a project, part of which was the development of the Territorial Impact Assessments (TIA) method. In parallel to TIA, ESPON specialists implemented several projects on developing European Territorial Cohesion Indicators (ETCIs).

To assess the territorial influence in European policies and projects, the project leader – Roberto Camagni, emphasized the need to define the concept of "territorial cohesion" (ESPON, 2006a). According to Camagni, territorial cohesion can be understood through three dimensions: territorial efficiency, territorial quality, and territorial identity (Camagni, 2005; ESPON, 2006a). According to Camagni's concept of territorial cohesion, the above three dimensions cover critical ideas used in various policies and are divided into subcomponents for which indicators are calculated. This model, named Territorial Efficiency Quality Identity Layered Assessment – TEQUILA, is presented in an adapted version in Figure 1.1.

Regarding the ESPON reports, the TEQUILA model was an innovative operational tool proposed in the ESPON 2006 project 3.2 for the assessment of territorial impacts, which was then "updated and modernized" for use in two specific EU policies: transport and common agriculture.

It should be noted that even though the promotion of a polycentric model of EU development is a fundamental goal of the European Spatial Development Perspective - ESDP and a concept that was actively discussed in scientific circles in the early 2000s, "polycentric" is not considered as a critical element or dimension in the proposed models Thus, the creation of an efficient and polycentric urban system is a declared subcomponent of territorial efficiency and not a separate component within the TEQUILA model.

The later Camagni's model (Camagni, 2010), which included all three components - territorial efficiency, territorial quality, and territorial

identity, was primarily systematized according to the main three directions of cohesion policy.

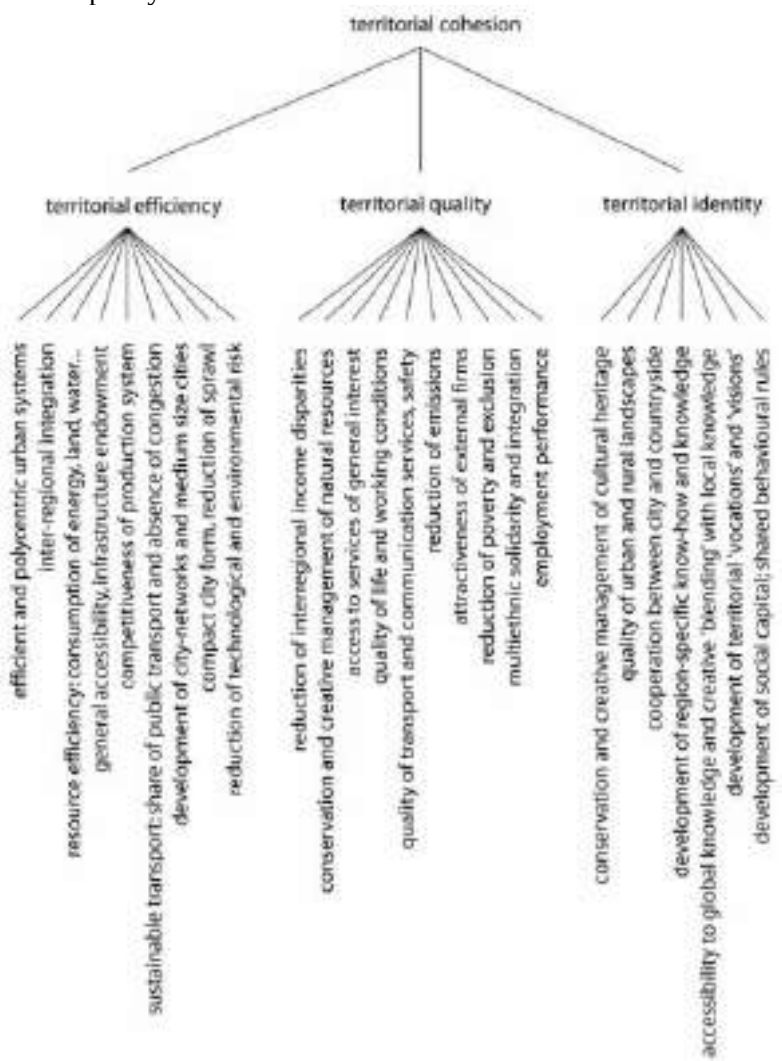

Figure 1.1 – Adapted conceptual model of territorial cohesion: TEQUILA (ESPON, 2006)

According to Camagni's conceptual model, territorial efficiency results from the interaction of economic cohesion and environmental

sustainability, and territorial quality is in the middle of the goal of social cohesion and environmental protection (Fig. 1.2) (Camagni, 2010).

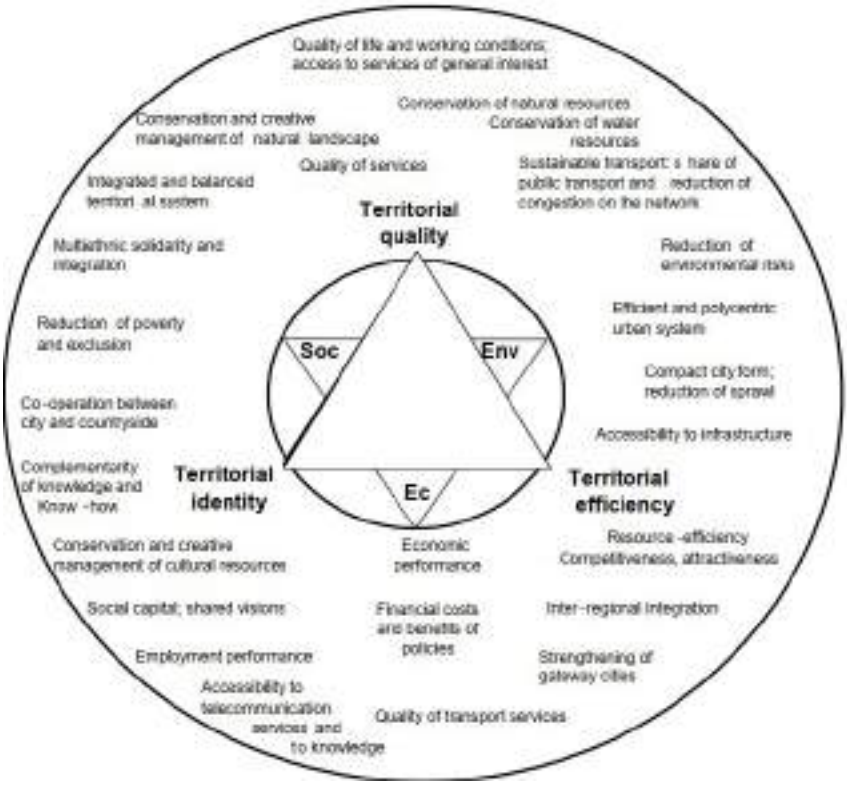

Figure 1.2 – The integrated Strategy of territorial cohesion according to R. Camagni (2010)

Criticizing the conceptual model of territorial cohesion of R. Camagni, the Portuguese researcher of the polycentrism and the territorial cohesion concept Eduardo Medeiros emphasizes that in the model of R. Camagni (as in the ESPON reports), the fundamental goal of the European perspective of spatial development (ESDP) regarding the promotion of the polycentric model of EU development is not presented. That is, in accordance with the Camagni's conceptual model, polycentrism is not an essential element or dimension. Therefore, within the framework of his model of territorial cohesion, E. Medeiros (Medeiros, 2016) singles out

four key components: (1) polycentrism as the "cornerstone" of EU spatial policy; (2) socio-economic cohesion; (3) environmental sustainability; and (4) territorial cooperation/governance. (Fig. 1.3).

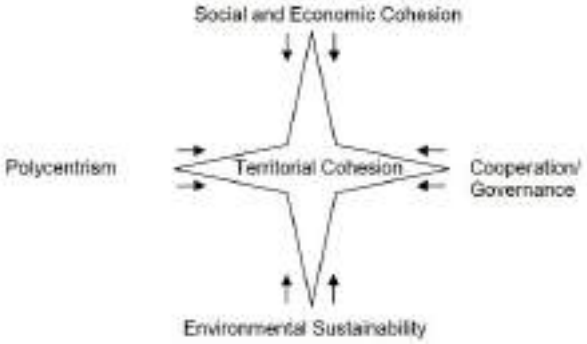

Figure 1.3 – Graphic model "Star of the Territorial Cohesion"
by E. Medeiros (2019)

In the course of the main conceptual foundations and practical aspects analysis of the EU cohesion policy implementation, which are primarily disclosed in numerous documents of the European Commission and the scientific results of research by European scientists, there is a need to form a clear understanding of the concept of territorial cohesion, because, as stated in the Green Paper on Territorial Cohesion, the common sense the problems that arise in the provision of territorial cohesion "...can help to improve the governance of cohesion policy, make it more flexible, more able to adapt to the most appropriate territorial scale, better respond to local preferences and needs and better coordinate with other policymakers at all levels in accordance to the principle of "subsidiarity". Understanding the capacity of the concept and its content will contribute to more effective and grounded scientific and practical results of cohesion policy. An analysis of approaches to the category "territorial cohesion" is given in Table 1.1.

The Green Paper on Territorial Cohesion (2008) defines the content of territorial cohesion through its directions, which, within the framework of this document, included (CEC, 2008):

– improving the use of regional potential and territorial capital;

– overcoming distance factors in access to services that are of joint economic interest, as well as to energy resources;

– support for interaction of interregional and cross-border cooperation;

– ensuring better coordination of national and European policies that have a territorial effect;

– application of a differentiated approach to forming policies about different territories.

Table 1.1 – Analysis of the category "territorial cohesion"

Analysis of the content of the "territorial cohesion" category	
Institutional approach	
Green Paper on Territorial Cohesion	To ensure a balanced and sustainable territorial development of the EU as a whole, strengthening its economic competitiveness and capacity for growth while respecting the need to preserve its natural assets and ensuring social cohesion; - "...builds bridges between economic efficiency, social cohesion, and ecological balance, putting sustainable development at the centre of policymaking."
Position paper to the EU Green Paper on Territorial Unity	Territorial cohesion is an efficient principle. As a means of justice between citizens, it can be the ultimate operational expression of European solidarity. It is vital to Europe's economic future as a way to make optimal use of all of Europe's territorial diversity, which constitutes a significant comparative advantage in an era of global turbulence. This is, in fact, a geographical principle that should permeate the formulation of a wide range of European policies and increase the day-to-day effectiveness of their implementation.
Third Report on Economic and Social Cohesion	A policy aimed at ensuring that people are not disadvantaged because of where they live or work in the Union
Fifth Report on Economic, Social and Territorial Cohesion	Territorial cohesion emphasizes the importance of access to services, providing sustainable development, "functional geography" and territorial analysis
Territorial Agenda – 2020	"A prerequisite for achieving sustainable economic growth and the introduction of social and economic cohesion - the European social model"
Sixth Report on Economic, Social and Territorial Cohesion	Promoting the harmonious and sustainable development of all territories based on their characteristics and resources
Seventh Report on Economic, Social and Territorial Cohesion	Territorial cohesion emphasizes the importance of long-term stable, predictable investments, especially in times of crisis. "...flexible, functional regions, macro-regions, megacities or cross-border areas should solve the problems of the whole EU, such as the transition to a low-carbon economy and reducing the negative impact of climate change"
Eighth Report on Economic, Social and Territorial Cohesion	It highlights the potential of the green and digital transition as new growth drivers for the EU. Still, it argues that new economic, social, and territorial disparities could emerge without appropriate policy measures.
Kiruna Conference on Territorial	Territorial cohesion is about ensuring the balanced development of all these places and ensuring that our citizens can make the most of the specific features of the territory.

Analysis of the content of the "territorial cohesion" category	
Cohesion	
Scientific approach	
Roberto Camagni (2008)	Territorial cohesion can be seen as a territorial dimension of sustainability beyond the technological, behavioral, and diplomatic dimensions.
Andreas Faludi (2013)	Reduce the dominance of the central urban area not only economically but also in terms of access to decision-making - Territorial cohesion is considered from the point of view of how well the activities within and between the constituent elements harmonize.
Willen Molle (2007)	Territorial cohesion can be seen as a situation whereby people and firms are not unduly handicapped by spatial differences in access to basic services, basic infrastructure and knowledge
Andrew Jordan & Adrian Schout (2007)	Territorial cohesion is gradually becoming an essential objective of EU policy (ESPON, 2006) to promote a more balanced EU territory, mainly due to the growing horizontal interdependence between EU policy and territorial development issues. However, the territorial policy is not a formal competence of EU policy.
Marjorie Jouen (2009)	Territorial cohesion has three main directions: reducing geographical differences, ensuring coherence between sectoral policies and strengthening ties between territories.
Kai Böhme & Erik Gløersen (2011)	Territorial cohesion should contribute to economic growth to achieve the "Europe 2020" goals and increase Europe's competitiveness. This involves a strong emphasis on territorial potential and supporting the smart growth and connectivity of European economic centres. Territorial cohesion will only be possible if Europe's most economically viable and robust regions entirely use their growth potential, thereby serving as an engine for developing the larger territories surrounding each of them. - Territorial cohesion is a balanced development focused on European solidarity, emphasizing inclusive growth, fair access to infrastructure services, and reducing economic disparity. - Territorial cohesion is policy formation at the local level, paying particular attention to local conditions of development - a step below the regional level. Indeed, the identification and exploitation/exploitation of tangible and intangible endogenous potentials are crucial for development and smart, inclusive, and sustainable growth in Europe. - Territorial cohesion refers to geographical features. - To contribute to the achievement of the sustainable development goal of the Europe 2020 strategy and to take into account the environment and climate change, territorial cohesion also has an environmental dimension that emphasizes sustainable development. - Territorial cohesion – refers to supporting dialogue with other sectors to strengthen the territorial dimension in various policy areas
Gonçalo Santinha and Teresa Marques (2012)	"...a means of achieving harmonious development, the value of diversity and complementarity, as well as strengthening the development of endogenous resources"
Oleksiy Orzhel (2012)	Territorial cohesion is implemented through the strengthening of interregional, cross-border, international cooperation; by establishing connections and communication between settlements and regions, connecting territories and localities to transport, telecommunications, energy, and other networks, eliminating or minimizing obstacles to movement, economic

Analysis of the content of the "territorial cohesion" category	
	activity, education, ensuring high quality of state / public services and guaranteed access to public goods, regardless of territory or region. Territorial cohesion is based on a comprehensive study of the region's potential and the use of its resources. It promotes integration into interregional and national markets, global markets, and the internal EU market.
Eduardo Medeiros (2018)	- the promoting process a more cohesive and balanced territory by: (i) supporting the reduction of socio-economic territorial imbalances; (ii) promoting environmental sustainability; (iii) strengthening and improving territorial cooperation/management processes; and (iv) strengthening and establishing a more polycentric urban system.
ESPON 2.2.1 (2011)	Territorial cohesion refers to a given geographical entity's potential, position, and relative position. It can be analyzed and implemented at different geographical levels or scales, i.e., micro, meso, or macro levels
ESPON INTERCO(2011-2017)	- Smart growth in a competitive and polycentric Europe; - Inclusive, balanced development and fair access to services; - Local conditions of development and geographical features; - Ecological dimension and sustainable development; - Management and coordination of policy and territorial influences.

Sourse: compiled by the author based on (Camagni, 2008; Faludi, 2013; Molle ,2007; Jordan & Schout, 2007; Jouen, 2009; Böhme & Gløersen, 2011; Santinha & Marques ,2012; Orzhel ,2012; Medeiros, 2018; CEC, 2008; CEC, 2004; CEC, 2010; CEC, 2005; ESPON,2011 ESPON,2017)

In our opinion, the list of territorial cohesion directions given in the framework of the Green Paper is thorough but incomplete. During fifteen years (before the global financial and economic crisis of 2009), the accumulated empirical and theoretical studies laid a sound basis for the EU territorial cohesion policy, highlighting five main postulates (Jouen, 2008). The first postulate was related to the need to regulate and limit the influence of market forces. The second postulate identified the limited impact on reducing territorial disparities of existing policy instruments, regardless of whether or not they are related to economic and social cohesion policy. According to the third postulate, territorial differences take on new forms; they occur on a constantly smaller scale and are cumulative. Fourth, the weaknesses of territorial cohesion are very costly and will become even more significant in the future. According to the fifth postulate, the population remains attached to the European territorial model of balanced use of space and vast diversity; despite the development of practice, it is increasingly aware of this problem.

The above postulates should be considered in the context of the time they were written. The challenges that EU member states faced after the global crisis conditioned the further development of cohesion policy. Therefore, the position of the cohesion policy formation in the future after

2008 was mostly reactive, being formed in the conditions of the adverse effects of the global financial and economic crisis, the migration crisis (caused by the armed conflict in Syria), as well as the crisis caused by the COVID-19 pandemic. A proactive approach to ensuring regional cohesion, in our opinion, lies in need to integrate cohesion policy approaches (in particular: place-based approach, multi-level approach, and partnership-led approach) and cohesion goals into other policies and tools

In addition, even in the context of the publication of the Green Paper in 2009. The Assembly of European Regions (AER, 2009), the largest organization of regions in Europe, submitted an official response in addition to the Green Paper, which included the following:

- Territorial cohesion should be a comprehensive concept that affects all policy areas that are important for sustainable development, growth, and quality of life in European regions.

- Even though territorial principles should be established at the EU level, the focus of subsidiarity implies that they should be approved at the lowest possible level of governance.

- Strong coordination of the territorial unity goal with other decisions taken both at the EU and national level is necessary.

- The European Commission should play an important role in supporting and encouraging cooperation in activities of common European interest.

- The EC should improve existing forms of cooperation (European Grouping for Territorial Cooperation - (European Grouping for Territorial Cooperation, INTERREG, INTERACT)) and create new opportunities for cooperation, such as partnerships in rural areas and cooperation along external borders.

- To monitor the characteristics and trends of territorial cohesion, the balance between indicators controlling regions' economic, social, and environmental development is important for a sustainable approach.

The analysis of conceptual approaches to defining the Concept of "territorial cohesion" shows that accepted attempts to explain the Concept indicate that there is currently no universally accepted concept of territorial cohesion. The term "territorial cohesion" has a rather vague formulation, and any attempts to form a single concept are instead an attempt to reach a "moving target" that is hard to hit and hard to grasp (Drevet, 2007; van Well, 2012). Since the main stakeholders emphasize different dimensions of the idea of territorial unity, the Concept must be fluid enough to accommodate temporal changes, so any attempt to define it precisely will

inevitably lead to the exclusion of specific meanings or aspects and thus lead to a worse result (Böhme & Gløersen, 2011). European Commission's program documents and recommendations, which are devoted to social, economic, and territorial cohesion issues, also don't clearly understand what constitutes a "cohesive territory". It outlines only the ways and mechanisms (or mechanism elements) of achieving territorial cohesion in specific time and conditions. These serve as causes or consequences of existing disproportions in developing individual territories. The accumulated experience of particular regions shows that applying single, generally defined approaches to solving the issue of levelling regional disparities in development gives heterogeneous results in different areas. In addition, in the context of crisis phenomena (such as the global financial and economic crisis, the "migration" crisis associated with the waves of inflow of migrants and refugees from countries with unfavourable living conditions and a low level of well-being in the territory of the EU; the economic downturn caused by the pandemic Covid-19, etc.), the effectiveness of the regional cohesion policy in different regions of the EU is also not uniform. Therefore, regions applying the concept of regional cohesion at the level of the entire European Union should interpret its content in their way, facing various empirical problems and ensuring its implementation by national and sectoral programs and plans.

Summarizing, it can be stated that there are two approaches to understanding the territorial cohesion concept. According to the first approach, the differentiating element of territorial cohesion is its perception either as a process, even as a tool for achieving goals, or as "…a theoretical structure to which we should strive" (Markowski, 2009). According to the second approach, the emphasis shifts to the problem of levelling the socio-economic differences of the region, supporting endogenous factors of development, highlighting the spatial aspect of a particular territory as a characteristic that must be taken into account to achieve cohesion as such (at the same time in social, economic and territorial aspects).

In our opinion, in forming the "territorial cohesion" concept, the widest approximation to the formation of the territorial cohesion definition is obtained through a multi-faceted integrated approach. That is, the concept of territorial cohesion can be considered from the standpoint of achieving the ultimate goal - balanced, sustainable development and smart, inclusive growth for all regions by providing the population access to infrastructure services, reducing economic and social disparities, increasing the competitiveness of the territory (through the effective use of material

and non-material endogenous territories' potentials, ensuring investments in the human capital of the region; based on the principles of development's polycentricity, regional cooperation, coordination and coordination of policies and instruments (at the national, regional and local levels) by the cohesion policy).

Since the development and implementation of the EU cohesion policy, approaches to ensuring this policy have changed, being formed under the influence of various phenomena and events. Conceptual approaches to the formation of European policy on ensuring territorial cohesion changed depending on the context of historical events in the EU and corrections made through the conclusions made from the analysis of actual results for previous periods.

As a result of the European Commission Reports' analysis of EU Cohesion and scientific developments along the conceptual foundations of territorial cohesion to ensure regional development, specific components and dimensions of territorial cohesion were systematized within the framework of this study (Table 1.2). Thus, a scientific approach to determining the territorial cohesion elements is represented by the works of Andreas Faludi (Faludi, 2004; Faludi, 2006; Faludi, 2013), Eduardo Medeiros (Medeiros, 2016; Medeiros, 2018), and Roberto Camagni (Camagni, 2008), researchers who are part of the European Spatial Cooperation Observation Network - ESPON, which formed both conceptual and applied aspects of territorial cohesion).

Within the institutional approach, the components and dimensions of territorial cohesion are given, which were revealed during the analysis of all available reports of the European Commission on Social, Economic, and Territorial Cohesion, i.e., Third (2003), Fourth (2007), Fifth (2010), Sixth (2014), Seventh (2017) and Eighth Report on Economic, Social and Territorial Cohesion (2022), Green Paper on Territorial Cohesion (2008), European Spatial Development Perspective - ESDP (European Spatial Development Perspective, 1999).

Summarizing, it can be stated that the approaches to ensuring the EU territorial cohesion changed depending on the context of events in Europe, in particular: the reception of new member states; the financial crisis phenomena impact; the COVID-19 pandemic impact; conclusions drawn as a result of the analysis of the actual results of the cohesion policy for previous periods. It provided an opportunity to assess specific measures' positive and negative effects. The territorial cohesion policy acquired various forms and even contents in different periods.

Table 1.2 – Dimensions and components of territorial cohesion

Reports on EU territorial cohesion and other sources / Dimensions and components	Scientific approach			Institutional approach							
	Eduardo Medeiros	Andreas Faludi	Roberto Camagni	ESDP (1999)	3rd Report (2003)	4th Report (2007)	Green Paper on Territorial Cohesion (2008)	5th Report (2010)	6th Report (2014)	7th Report (2017)	8th Report (2022)
Balanced territorial growth		√		√	√	√	√	√	√	√	√
Inclusive growth									√	√	√
Environmental sustainability/ Sustainable development of the territory	√	√	√	√		√		√	√	√	√
Competitiveness		√							√	√	√
Territorial connection (telecommunication, transport, other components)							√			√	√
Territorial cooperation	√	√					√		√		√
Territorial polycentricity	√	√		√		√					
Access to services/infrastructure		√	√	√	√	√		√	√	√	√
Socio-economic cohesion	√		√		√	√			√	√	√
Territorial administration		√			√	√			√	√	√
Functional regions								√	√		
Territorial influence / analysis								√	√	√	√
Investments in human capital									√	√	√
Agglomerations and clusters		√							√		
Youth Employment Initiative/ Anticipating Changes in the Labor Market										√	√

Sorrse: Compiled by the author based on (Faludi, 2013; Medeiros, 2018; Camagni, 2008; CEC, 1999). CEC, 2004; CEC, 2008; CEC, 2010; CEC, 2014; CEC, 2017; CEC, 2022)

Thus, if in the period of the late 1990s and early 2000s, cohesion policy reflected the desire to counteract the dominant tendency of market forces and the practice of giving preference to the most competitive and populated regions in the context of globalization, shifting the emphasis to providing financial assistance to less developed regions (which meant reverse discrimination). At the initial stages, conceptual approaches to ensuring territorial cohesion were formed more by "trial and error" than based on solid evidence-based theoretical foundations, developed under the influence of urgent challenges as a reaction to identifying disparities in the development of individual regions. With the formation of systematic and methodological tools for evaluating the results of the EU cohesion policy as a whole, as well as the accumulation of empirical data and individual facts that arose during the practice of the implementation of the cohesion policy in specific regions of the EU, over the past two decades, based on the indicators analysed during the performance of the territorial cohesion policy and the accumulation of scientific achievements, the conceptual basis for the formation of the territorial cohesion dimension was tightened. Thus, the position of EU cohesion policy formation after 2008 was mostly reactive, being formed under the adverse effects of the global financial and economic crisis, the migration crisis (caused by hostilities in Syria), and the crisis caused by the COVID-19 pandemic. A proactive approach to ensuring regional cohesion, in our opinion, lies in need to integrate cohesion policy approaches (in particular: place-based approach; multi-level approach; and partnership-led approach) and cohesion goals into other policies and instruments were clearly defined in the latest Eighth Report on Economic, Social and Territorial Cohesion.

Extrapolating the European experience to Ukrainian realities, it should be stated that Ukraine, as a state whose level of resources, even before the start of full-scale hostilities of the Russian Federation on the territory of Ukraine, was far from the average level for EU countries, does not have as many resources for the implementation of cohesion policy as the EU. In addition, the economic, political, social, and material consequences of active hostilities necessitate resource consolidation to ensure the most effective realization of the potential of each region. In Ukraine, there is neither excess time nor excess resources for the formation of regional development policy to have several iterations, correcting at each step the mistakes and failures of previous periods, as was the case with the cohesion policy in the EU. Therefore, the principle of "building back better" proclaimed at the International Conference on Reconstruction in

Lugano (The Recovery Plan of Ukraine, 2022) should be implemented not only within the framework of the reconstruction of material infrastructure at the regional and local levels but also to provide for recovery, rehabilitation and reconstruction of societal systems, and revitalization of livelihoods, economies and the environment within post-war recovery.

1.2. The economic issues of the European integration of Ukraine to joining the European Union

The signing of the Partnership and Cooperation Agreement between Ukraine and the EU from 1998 to 2008 was the basis of economic cooperation and international relations. Such an agreement made it possible to create significant progress in the development of relations between Ukraine and the EU in the economic integration of Ukraine into the EU. Further expansion of economic relations between Ukraine and the EU depends on many factors, including the ability to ensure the declared priorities.

European integration makes it possible to create stable processes in the construction of economic relations between Ukraine and the EU on the model of leading European states. The EU is one of the world's largest economic markets, which has its advantages in international relations, which is the basis of foreign policy.

On June 23, 2022, the heads of state and government of the European Union decided to grant Ukraine the status of a candidate country for EU membership. This status is granted without any conditions, but some recommendations of the European Commission must be fulfilled. Ukraine has already completed part of the work on implementing the recommendations of the European Commission in granting the status of a candidate country for EU membership.

Ukraine managed to overcome most of the difficulties on the path of European integration and become an integral part of the renewed Europe. Significant changes were made in the legal, economic, financial, social and political spheres to achieve the set goals. The Ukrainian political system is built on democratic principles and will do everything to become one of the most stable in Europe. The openness of the economy, the entrepreneurial climate, the stability of the financial system, as well as many other factors, should contribute to Ukraine becoming one of the most attractive European states for doing business. Numerous sociological surveys show that the

trust of Ukrainians in European institutions is very high, in the opinion of Ukrainian citizens, European integration is the right decision.

War has affected our lives and the field of open data is no exception. In order to guarantee national security and protect the life and health of Ukrainian citizens, access to public information in the form of open data has been suspended.

Ukraine has been setting trends in the field of open data development for more than a year. In 2022, our country took 2nd place in the Open Data Maturity 2022 rating among 35 countries. In 2021, we were in sixth place, and in 2020 - in 17th place. In 2022, the maturity level of open data in Ukraine is 97% (Giulia Carsaniga, Eline N. Lincklaen Arriëns, Jochem Dogger, Mariska van Assen, Gianfranco Cecconi, 2022).

The highest level of this rating includes eight countries, including: France (97%), Ukraine (97%), Poland (95%), Ireland (95%), Cyprus (94%), Estonia (93%), Spain (92%) and Italy (91%) (Fig. 1.4).

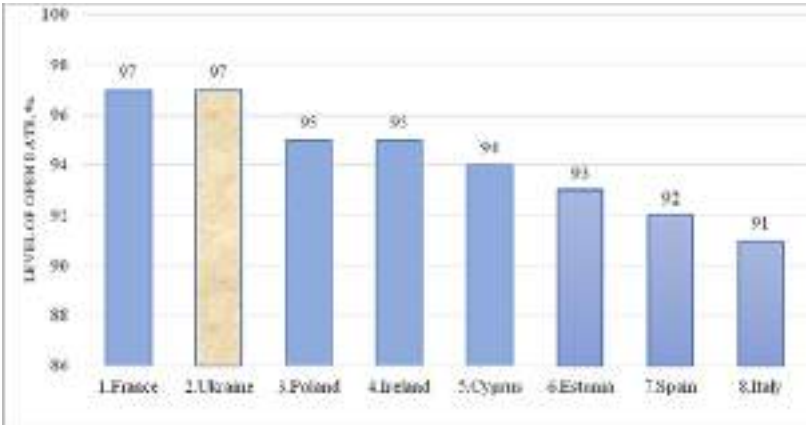

Figure 1.4 – European countries with the highest level of data openness in 2022

Source: built by the authors according to the data (Carsaniga, 2022)

The next five countries in Europe: Slovenia, Norway, Denmark, the Czech Republic and Lithuania form the second highest level of data openness between 86% and 90%. The share of such countries is 3% (Fig. 1.5).

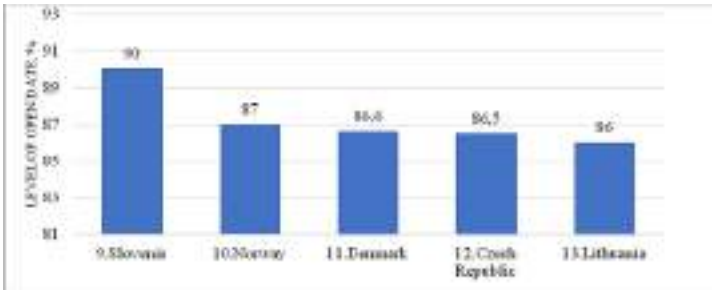

Figure 1.5 – European countries belonging to the second highest level of data openness in 2022.
Source: built by the authors according to the data (Carsaniga, 2022)

Fourteen countries belong to the third, slightly lower level, with values from 76% to 82% (Fig. 1.6).

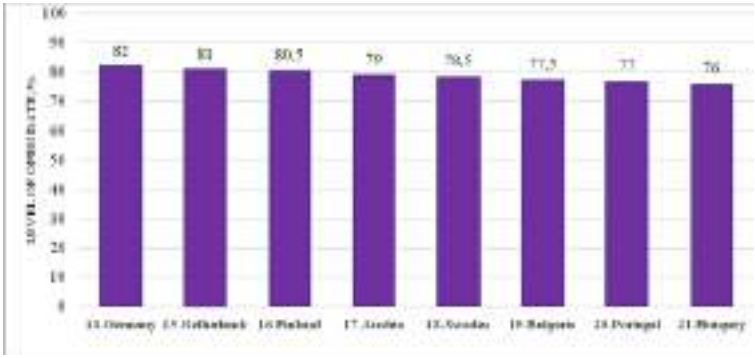

Figure 1.6 – European countries belonging to the third level of data openness in 2022.
Source: built by the authors according to the data (Carsaniga, 2022)

The fourth level of "newcomers" contains eight countries with data openness values from 18% to 62% (Fig. 1.7).

The human right to protection in the information sphere is becoming more and more relevant with the presence of an annual increase in the level of threats. The collection and processing of personal information about the user in the network is part of the functions of network administration. Large volumes of collected information are contained in social networks, government institutions, banks, spheres of various services, etc. The

provided information is used using modern information technologies. There are cases when fraudsters get hold of such information and resort to manipulating it for their criminal activities (Rybalchenko L., Kosychenko O., 2022).

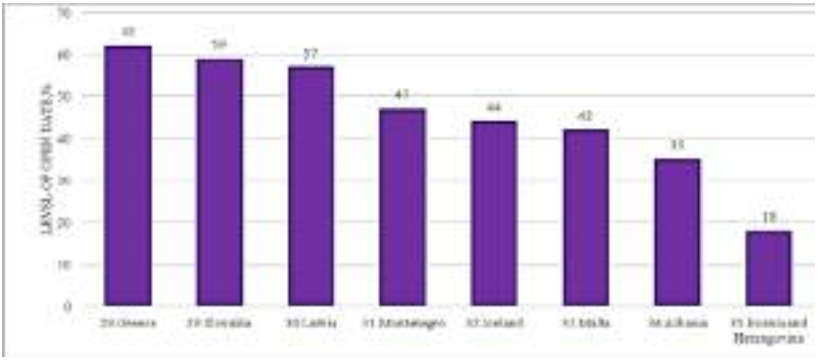

Figure 1.7 – European countries belonging to the fourth level of "newcomers" of data openness in 2022.
Source: built by the authors according to the data (Carsaniga, 2022)

Such a violation of the confidentiality of personal information leads to threats to the life of an individual and the functioning of the integrity of state guarantees for the protection of human rights. Such threats arise in the conditions of social and digital transformations of the modern information society not only in Ukraine, but also in other countries of the world. Therefore, conducting research and analysis of these transformations is a characteristic feature of the current state of development for the development of means and methods of countering such threats. This is a necessary condition for citizens of Ukraine to be able to fully exercise their rights in any field and to be competitive in the modern information world (Rybalchenko L., Kosychenko O., Klinytskyi I., 2022; Kosychenko O., Rybalchenko L., 2022).

During the full-scale Russian invasion of Ukraine, the digital transformation of the economy took on an important role, when it was necessary to make strategic decisions to ensure the stability and flexibility of the Ukrainian state in wartime conditions. At that time, the priority directions were the formation of the domestic digital market with the EU. As part of the integration of Ukraine into the European Union, the project "Digital Transformation for Ukraine" (DT4UA) was implemented with the

allocation of 17.4 million euros of aid. The purpose of such a program is the introduction of efficient and safe public services, as well as a quick response to the challenges of war (Government portal, 2023).

– The European Union has identified 4 directions for funding:

– improvement of data exchange between registers and state institutions;

– development of electronic identification infrastructure in accordance with the eIDAS regulation;

– development of digital services and use of the Diya software application;

– development of an electronic management system that will allow transparent consideration of criminal cases (Government portal, 2023).

To develop the digital infrastructure in Ukraine, participation in the competitions of the European Union Program "Digital Europe" until 2027 has been implemented. Digital change, especially cyberspace, requires further developments to counter cyber attacks that can block mobile and financial services, replace buildings, and attack banking and financial activities. In addition, the European Union has been supporting the digital transformation of Ukraine since 2016 with a total budget of over 51 million euro's.

As for the activity of the National Bank of Ukraine in the field of European integration, it is aimed at the implementation of the Association Agreement between Ukraine and the EU. Such an Agreement increases the efficiency of the financial services market, ensures approximation of national regulations and supervision to EU rules and international standards. It also creates prerequisites for strengthening the competitiveness and equal cooperation of Ukrainian financial institutions with European ones, contributes to increasing the level of providing financial services and protecting consumer rights (National Bank of Ukraine, 2023).

To achieve the goal, the National Bank of Ukraine constantly takes steps aimed at:

– implementation of the Association Agreement between Ukraine and the EU, implementation of EU legal acts into national legislation;

– implementation of international standards in the field of financial services;

– implementation of decisions of bilateral bodies of the Ukraine-EU association and other international legal obligations and agreements in the field of European integration;

– strengthening of trust in the National Bank as a central bank that meets European standards and is integrated into the European community of central banks.

The introduction of European standards and practices by the National Bank of Ukraine contributes to the effective mechanisms of regulation of financial institutions, improvement of supervisory approaches and transparency of the financial sector. All this is the key to the functioning of a stable Ukrainian financial market (National Bank of Ukraine, 2023).

Approximation of national legislation to EU law, implementation of international standards, development of cooperation with regulatory and supervisory bodies of EU member states, as well as its institutions, takes place in the following directions:

– Banking regulation and supervision;

– Functioning and development of payment systems;

– Liberalization of capital movement and payments;

– Regulation and supervision of the market of non-banking financial services;

– Protection of the rights of consumers of financial services;

– Combating money laundering and terrorist financing;

– Accounting;

– Information security in the banking system.

In order to integrate the financial market of Ukraine into the European financial space, the National Bank of Ukraine creates conditions for increasing the level of cooperation with the supervisory bodies of EU member states. In particular, in the field of regulation and supervision of banks and non-bank financial institutions, as well as strengthening cooperation with the European Banking Authority (EBA) and the European Insurance and Pensions Authority (EIOPA), the European Central Bank (ECB) (National Bank of Ukraine, 2023).

On March 24, 2023, the Government published the annual Report on the implementation of the Association Agreement between Ukraine and the European Union for 2022. The report states that Ukraine has already fulfilled 72% of all obligations stipulated by the Agreement on the integration of Ukraine into the internal market of the European Union. The overall progress of the implementation of the Agreement for 2022 increased by 9% (Government portal, 2023).

The greatest progress has been achieved in the following areas:

– intellectual property – 94%;

– public finance management – 90%:

– statistics and information exchange - 96%;

– justice, freedom, security, human rights – 91%;

– humanitarian policy - 91%.

Considering the main three groups of those responsible for 2014-2022, then:

– The Cabinet of Ministers of Ukraine implemented 70% of measures;

– Verkhovna Rada of Ukraine by 61%;

– other state authorities by 59%.

Ukraine achieved the greatest progress in the implementation of the Association Agreement between Ukraine and the European Union for 2014-2022 (Fig. 5-6) in the following areas:

– statistics and information exchange - 96%;

– intellectual property – 94%;

– justice, freedom, security, human rights – 91%;

– humanitarian policy – 91%;

– Public finance management – 90% (Government portal, 2023).

More detailed information by spheres of activity regarding the implementation of agreements by Ukraine for joining the European Union is given in Fig. 1.8-1.9.

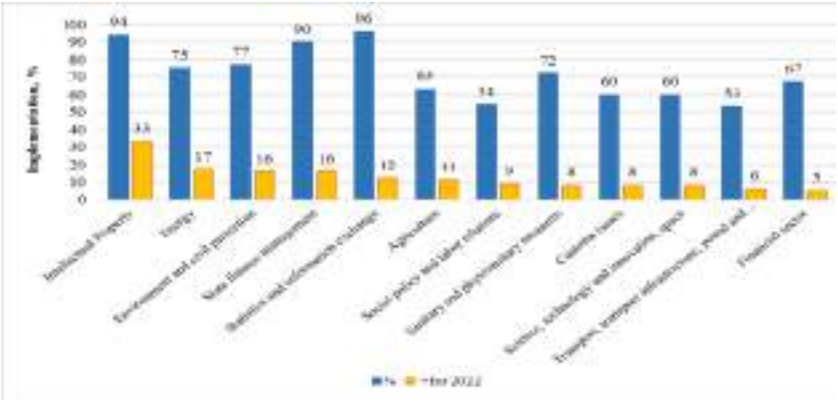

Figure 1.8 – Implementation of the Association Agreement between Ukraine and the EU by spheres of activity in 2014-2022

Source: built by the authors according to the data (Government portal)

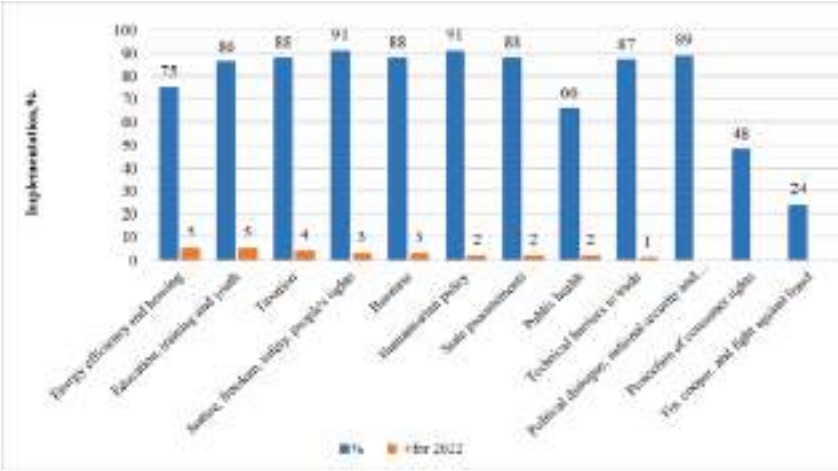

Figure 1.9 – Implementation of the Association Agreement between Ukraine and the EU by spheres of activity in 2014-2022 (continuation of Fig. 1.8)
Source: built by the authors according to the data (Government portal)

The worst implementation progress is observed in the areas of consumer protection (48%) and financial cooperation and anti-fraud (24%) (Government portal, 2023). These areas are important for Ukraine, the protection of consumer rights and the processing of personal data have been increasingly used in all spheres of human life in recent years. The rapid development of information technologies requires the use of personal data not only for work, but also for everyday life, private life, medicine, etc. There are questions about the violation of human rights.

Creating an appropriate level of personal data protection system is one of the important tasks of Ukraine in the international space. Improving the existing system of personal data protection is a priority direction for the construction of state and legal regulation of the protection of the rights and freedoms of society, as well as integration into international and European standards of personal data protection. Confidentiality of personal data is protected by the Constitution of Ukraine.

According to the legislation of Ukraine, enterprises, institutions, private companies, banks and others that have to process personal data of consumers are obliged to protect this data and are responsible for violations of their confidentiality.

One of the ways to prevent violations of human rights to the protection of personal data is to increase the level of awareness of the legal principles of processing and protection of personal data. The introduction of the best tools and European standards for the protection of personal data into domestic legislation, strengthening of responsibility for its violations and monitoring in the field of personal data protection will provide an opportunity to increase and strengthen the protection of citizens' rights to non-interference in their personal lives.

The issue of information confidentiality, protection of personal data, reliability of cyberspace has become relevant and increasingly important in the life of every inhabitant of the planet. Countries around the world are building up their cybersecurity capabilities.

The main cyber threats include violations of data integrity, unauthorized access, information confidentiality, interference with corporate or state secrets, etc. Such threats affect the functioning of any information or communication system, sphere of activity both at the enterprise or institution level, and at the state and national levels.

Therefore, to manage any cyber threats, it is necessary to create powerful protection against possible and potential threats with the involvement of highly qualified personnel and the use of modern software tools.

Issues at the national level are the definition of cyber threats, measures and capabilities of cyber security, the development of the main indicators of cyber security, their research according to certain characteristics, and the creation of appropriate groups of cyber security indicators for the analysis and development of measures to avoid them. Promoting a global culture of cyber security and improving security around the world is a top priority for our country.

Thus, each country has implemented relevant legislation, regulatory documents and standards designed to regulate the protection of personal data, processing, liability for violations of the rights to protection and privacy.

The main risks associated with the use of modern information technologies are irresponsibility of persons who disclose personal data during processing, failure to ensure the integrity and confidentiality of information, lack of reliable protection of personal data against leakage and distribution.

The development of Ukrainian legislation on the protection of personal data was not fully oriented to European standards, which are

presented in documents and international treaties of the Council of Europe and the EU. The analysis of the national legislative framework on the protection of personal data shows that the protection of personal data in Ukraine is insufficient and needs to be updated and improved before joining the EU.

In the current legislation of Ukraine, the regulation of issues of responsibility for violations of personal data protection standards still needs to be refined and adapted to international standards.

1.3. Ukraine and the EU energy sector integration: smart grid road map s standards for implementation in Ukraine

In recent years, an important part of the EU energy policy has been a set of measures, united by the term "Energy Transition", within which the leading countries provide for the permanent nature of economic development, where the ultimate goal is to achieve climate-neutral status in Europe by 2050 by significantly reducing the use of coal and other non-renewable energy resources (Denysiuk, 2019; Key facts, 2019; Hauff et al., 2014). This means a significant change in European energy policy, in particular, and its reorientation from demand to supply and the replacement of traditional centralized generation with dispersed generation, as well as avoiding unnecessary production and consumption of energy through energy saving measures and energy efficiency.

Nowadays, the essence of the EU's energy strategy is to guarantee the supply of energy resources at affordable prices in an uninterrupted mode. To this end, in 2014, the EU adopted one of the foundations of the Energy Union strategy – the EU Energy Security Strategy, the main areas of which were:

– the use of a wide range of available fuel resources and a significant reduction in the share of fossil fuels in the EU energy balance (decarbonization of the economy);

– diversification of external sources and suppliers of fuel resources and ways of their supply;

– development of a properly functioning energy and fully integrated internal market;

– adequate power of power generation and transmission enterprises, reliability and stability of power grids, their development and expansion of connections with power grids of other regions/countries;

- reduction of energy consumption of various groups of consumers based on the implementation of energy-efficient measures and the transition to alternative energy sources.

In order to effectively implement the directions of the EU energy strategy also in 2019, the European Commission officially approved the Fourth Energy Package "Clean Energy for All Europeans" (Hauff et al., 2014), which contains eight directive documents that determine mandatory requirements for the organization of internal and pan-European energy markets. These documents reflect the vision of the scenario in which the EU will transition to a new energy future. In general, the documents of the Fourth Energy Package define three main goals: achieving global leadership in the field of renewable energy sources, ensuring better conditions for consumers, prioritizing energy efficiency. The adoption of these documents in the European Union had a direct impact on the revision and clarification of priorities in the modern energy policy of Ukraine.

The Energy Strategy of Ukraine until 2035 "Security, Energy Efficiency, Competitiveness" (EEU) was thus adjusted taking into account the latest changes and the main directions of the modern European energy strategy. As a result of the implementation of the tasks envisaged by the Energy Strategy of Ukraine, by 2035 it was planned, in particular, to achieve a reduction in the energy intensity of GDP by more than two times and to increase the use of renewable energy sources to the level of 25% of the total primary energy supply.

In order to implement the tasks of the EEU planned to make a transition in Ukraine from the traditional power supply system with high-capacity generating stations that use fossil fuel to fundamentally new model of building the power supply system based on Smart Grid technology (Kyrylenko, 2016; Clean energy, 2016). This is characterized by the large-scale use of RES, the involvement of a wide circle of users (both producers of electric energy and its consumers) to the processes of managing the modes of the power supply system and, as a result, active data exchange between its objects (Blinov, 2021).

To ensure the achievement of the goals of the EEU, the Ministry of Energy of Ukraine has developed the "Concept for the implementation of "smart networks" in Ukraine until 2035" (Tankevich et al., 2014), in which:

– the concept of "smart networks" is revealed ;

– the general directions of implementation and use of "smart grid" technologies in the energy sector of Ukraine are defined;

- established priorities and main implementation mechanisms;

- the stages and circle of key participants in the implementation of "smart grid" technologies are established.

This Concept states that the platform for the promotion of "smart grids" in Ukraine is based on a ready-made set of technologies and measures defined in European and international standards, which determine technological implementation solutions for each component of the energy sector (electricity generation, its transportation, distribution, management of distributed resources, etc.), as well as a ready-made set of telecommunication and information protocols that contribute to the implementation of these technologies.

The existing course of the Concept of the implementation of "smart grids" in Ukraine until 2035 is aimed at the active development of Smart Grid systems in the energy system of Ukraine, fully corresponds to the priority directions of energy development in the EU, as well as tasks that need to be solved during the synchronous work of the IPS of Ukraine and ENTSO- E.

In the plan for the development of the transmission system for 2021-2030 , developed by NPC Ukrenergo and approved by Resolution of the NCRECP No. 57 of January 20, 2020, the implementation of the concept of "smart networks" in Ukraine is considered the main promising direction of the development of the transmission system. The implementation of the "smart grid" technology will allow dispatchers to obtain the tools needed to perform operational reliability calculations of the power system, as well as the means to collect the necessary amount of information for operational and current work planning. European Committee for Standardization (CEN) and the European Committee for Standardization in the Field of Electrical Engineering (CENELEC) have defined technologies and measures for the development of components of the energy sector according to the Smart Grid concept. The main task in the field of standardization based on the Smart Grid concept is to ensure compliance with uniform requirements for information exchange and communications at all hierarchical levels of the power system and the electricity market. Therefore, an urgent and extremely important task facing the power sector of Ukraine today is the implementation of measures to adopt modern European and international standards in the power sector, which ensure the development and implementation of Smart Grid technologies.

The implementation in Ukraine of international and European standards related to the Smart Grid concept is an important part of the overall set of measures provided for by the Energy Strategy of Ukraine for

the period until 2035, the Concept for the Implementation of "Smart Grids" until 2035 in Ukraine and the Transmission System Development Plan for 2021 - 2030, aimed at meeting the needs of society and the economy in fuel and energy resources in a technically reliable, safe, economically efficient and ecologically acceptable way to guarantee the improvement of society's living conditions.

When determining the priority directions for the development of the regulatory and technical base of Ukraine in order to promote the implementation of Smart Grid technology, one should take into account the strategic goals and current tasks set by the government for the electric power industry, as well as the optimal ways of solving these tasks, which should be based on the real opportunities of the Ukrainian economy.

Despite progress in Ukraine's standardization industry, the current situation with the adoption of modern standards in the field of electricity is unsatisfactory, since the volume of standards harmonized in Ukraine, issued by the European Committee for Standardization in Electrical Engineering and the International Electrotechnical Commission, is extremely insufficient.

The analysis of the current state of the regulatory and technical base of Ukraine showed the necessity and expediency of ensuring the solution of the most urgent and priority tasks established in the draft Concept of the implementation of "smart networks" in Ukraine by 2035. In particular, the analysis of the current state of affairs regarding the implementation of international IEC standards in Ukraine showed that this percentage is significantly lower than in European countries. The lack of harmonized standards for the construction of infrastructure elements and equipment in the power sector is one of the main reasons for the existence of technical barriers in trade between the energy markets of European countries and Ukraine, which limits the prospects for mutually beneficial cooperation between them.

The full implementation of the rules for the functioning of the energy industry in accordance with the provisions of the EU legislation requires the full representation of Ukraine in the International Electrotechnical Commission (IEC) and the European Committee for Standardization in the Field of Electrical Engineering (CENELEC).

Regulatory framework of Ukraine was determined that necessary to ensure the reliable and efficient functioning and development of the transmission and distribution systems of Ukraine based on the Smart Grid concept. It's be based on national laws and technical regulations, which are

the implementation of European directive documents, and should consist of national standards, harmonized with the European Directives of the New and Global Approach, which are mandatory, as well as standards identical to international ones. Nevertheless, the implementation of which is voluntary, due to the specifics of using certain equipment to solve specific problems. In addition, in those areas of application where international standards are not available, it is necessary to adopt national standards and other normative documents, in particular, organization standards and codes of established practice developed in accordance with international recommendations.

The total number of international standards required for the full implementation of all elements of the Smart Grid concept, the list of which is given in the Technical Report IEC TR 63097:2017 "Smart grid standardization roadmap" (SGCG/M490/G_Smart, 2014; The conceptual model, 2014), was more than 450 as of 2017. This the list is constantly increasing and being updated, which necessitates the implementation of a plan of measures (road map) for the gradual introduction of the necessary documents into the regulatory framework of Ukraine in the field of energy, which provides for a comprehensive approach when adopting new standards and updating or canceling existing ones. First, pay attention to the regulatory and technical support for the implementation of those functional Smart Grid systems, which are necessary to solve the most urgent and priority tasks established in the "Concept for the implementation of "smart grids" in Ukraine until 2035. The list of basic and published documents that used as basis for building a comprehensive model of information exchange on the electric energy market also includes such ENTSO-E regulatory documents that have not acquired the status of international or European standards, but actually regulate the procedures and formats of information exchange in separate segments or spheres of the electric energy market (International Electrotechnical, IEC SRD 62913; Blinov, & Tankevych, 2016).

Certain group of standards according to IEC/TR 63097:2017 constitutes the main package, which is necessary for almost all components of the Smart Grid architecture. Within the scope of the document, these standards are considered basic priority. Their further promotion and development will be a key task for IES in supporting the practical construction of intelligent networks. The Roadmap defines a group of basic standards (Core Standards), which have a significant impact on any Smart

Grid application and are considered as a basis for building modern and future intelligent networks, this group is listed in Table 1.3.

Table 1.3 – Basic standards of Smart Grid (Kyrylenko et al., 2022)

A basic standard or series of standards	The scope of the standard's main application
IEC 61970/ IEC 61968	General information model. Generation regulation systems, energy regulation systems (EMS); energy distribution control system (DMS); automation of energy distribution (DA); automation in substations (SA); distributed energy resources (DER); infrastructure of measuring instruments (AMI); demand management (DR); energy storage
IEC 62325	General information model, information exchange in the energy market. Generation regulation systems, energy regulation systems; energy distribution control systems; distributed energy resources; measurement infrastructure; demand management; internal business operations related to measurement; electricity storage.
IEC 61850	Automation of energy facilities, communication in hydropower; communication between distributed energy resources. Generation management, energy regulation systems; management of energy distribution; automation of energy distribution; automation in substations; distributed energy resources, electricity storage; electric transport
IEC 62056	Specification for Energy Accounting System (COSEM). Energy distribution control systems; distributed energy resources; measurement infrastructure; demand management; smart home; electricity storage; electric transport Data exchange for meter readings, tariff and load management.
IEC 62351	Security for all systems

Fig. 1.10 shows the level of implementation of basic Smart Grid standards in Ukraine according to the relevant series.

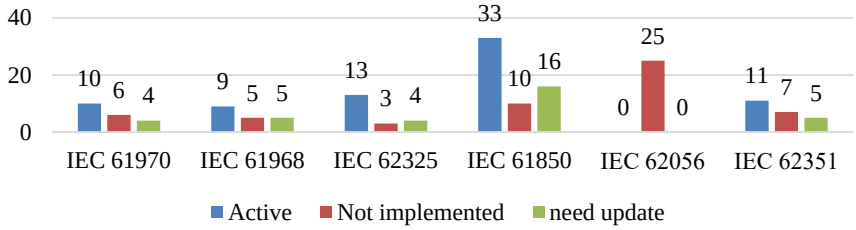

Figure 1.10 – The number of implemented and valid standards in Ukraine according to the relevant series related to the basic standards of the Smart Grid (Kyrylenko et al., 2022).

In addition to the group of basic standards, the Roadmap also highlights a group of "especially important standards" for the Smart Grid (Table 1.4).

Table 1.4. Group of "particularly important standards" Smart Grid according to the IES Roadmap (author's development) (Kyrylenko et al., 2022)

Standard or series of standards	The scope of the standard's main application
IEC / TR 62357	Basic Architecture of energy objects - SOA Energy regulation systems; energy distribution control systems; distributed energy management systems, market and trading systems, demand management, internal business operations systems related to metering.
IEC 60870-5	Remote control. Generation regulation systems, energy regulation systems; energy distribution control systems; automation of energy distribution; automation in substations.
IEC 60870-6	Communication between internal control centers using the TASE protocol.2. Generation regulation systems, energy regulation systems; energy distribution regulation systems.
IEC / TR 61334	Specification of the DLMS protocol for data transmission over distribution lines The infrastructure of measuring devices
IEC 61400-25	Communication between wind energy facilities. Management systems of distributed energy resources (wind energy facilities); energy regulation systems; energy distribution regulation systems.
IEC 61851	Communications in the field of electric transport. Electric transport. Housing and building management systems.
IEC 62443	Security of industrial automation and control systems
ISO/IEC 15118	Road transport. The communication interface between the vehicle and the network.
ISO/IEC TR 27019	Information technology - Protection methods - Information security management guidelines based on ISO/IEC 27002 for process control systems specific to the energy industry.

A diagram on Fig. 1.11 shows the level of implementation in Ukraine of a group of "particularly important" Smart Grid standards by the relevant series.

Systemic committees and strategic working groups created in IEC for new directions of innovative development. From the point of view of the introduction of SmartGrid technologies, the SyC Smart Energy "Smart Energy" and SyC Smart Cities "Smart Cities" working groups. The main task of these committees is to ensure the effective integration of electrical

networks, gas distribution systems, centralized heating and water supply systems, transport systems, development and implementation of relevant standards in the field of SmartGrid technologies, which necessitates the analysis and implementation of relevant international and European standards (Baranov et al., 2021; International Electrotechnical, IEC 62351; International Electrotechnical, IEC 61850; International Electrotechnical, IEC 61968; International Electrotechnical, IEC 61508).

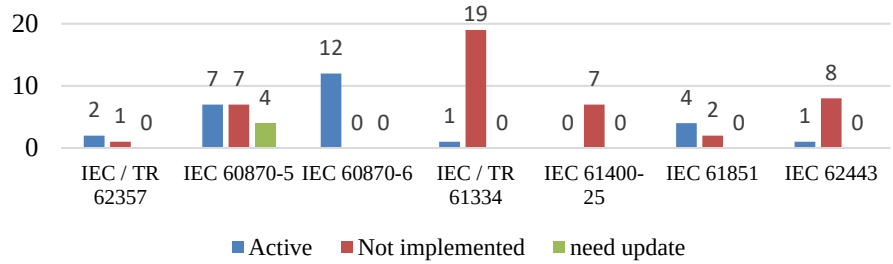

Figure 1.11 – The number of implemented and valid standards in Ukraine according to the relevant series of Smart Grid
Sourse: (Kyrylenko et al., 2022).

The purpose of the Strategy for the implementation of international and European standards for the development of the IPS of Ukraine according to the Smart Grid concept is the regulatory and technical support for the sustainable development of the Ukrainian energy industry in the direction of increasing the efficiency of the electricity supply system, improving the conditions for the integration of RES and distributed generation, the development of the IPS of Ukraine in the conditions of synchronous work with ENTSO -E and integration of the electricity market with the markets of the EU countries.

Result of the implementation of such a Strategy, a regulatory framework of Ukraine should be created, which should consist of national standards identical to international standards, the implementation of which is a necessary condition for ensuring the effective functioning of the Smart Grid architecture as a whole and the compatibility of its individual components. In addition, areas of application that are not adequately covered by international standards must be developed, as a result of which it is necessary to independently develop national (or departmental)

standards and other documents taking into account national characteristics but in accordance with the recommendations of international standardization bodies.

The main task of the Strategy is to determine the priorities for the implementation of groups and individual international and European standards, which will ensure the sustainable and synchronized development of the electricity system of Ukraine according to the SmartGrid concept, as well as the determination of the most appropriate way of their implementation. In addition, important tasks of the Strategy are:

– ensuring the unification of specialized scientific and technical terminology with generally accepted international terms within the framework of the general concept of Smart Grid , as well as its specific functional systems;

– ensuring a systematic approach to the creation of a regulatory framework , according to which the implementation of international and European standards should be carried out, if possible, in the form of sets of documents containing all the necessary standards to ensure the effective operation of the relevant functional system within the framework of the SmartGrid architecture;

– implementation of conditions of the official partnership between CENELEC and the National Standardization organization (NSO) of Ukraine, that is cancellation of the current national standards of Ukraine, which have lost their relevance and contradict the current European standards related to the concept of Smart Grid;

– update of international standards already implemented in Ukraine from the list given in IEC TR 63097:2017 "Smart grid standardization roadmap".

When implementing the strategy be considered that the technical report IEC TR 63097:2017 reflects the structure of the international standards system related to the SmartGrid concept as of 2017. Therefore, one of the tasks of the Strategy is monitoring the emergence after 2017 of new international and European standards in this field and analyzing the feasibility of their implementation in Ukraine. In particular, we are talking about the standards developed by the SyC Smart Energy "Smart Energy" and SyC Smart Cities "Smart Cities" working groups (International Electrotechnical, IEC 60050). The main areas of implementation of the Strategy are:

1) development of a group of specialized national dictionaries in the field of electric power, by translating the IEC multi-part electrotechnical

dictionary IES 60050 "International Electrotechnical Vocabulary (IEV)" (Denysyuk & Stsheletskyi, 2019);

2) implementation of basic priority standards (core standards), which form groups of standards that are necessary for the operation of most components of the Smart Grid architecture and allow the implementation of a framework for the construction of modern intelligent networks in which the possibility of their improvement to the future needs of the energy market is provided;

3) implementation of groups of standards for regulatory support of the following SmartGrid functional systems **,** which are most relevant for the development of the electric power system of Ukraine and are the basis of management of electric power systems and electric energy markets in Ukraine (classification of systems corresponds to that given in the technical report IEC TR 63097:2017):

– generation management system (Generation Management System);

– flexible AC transmission systems (FACTS for grids);

– energy management system (Energy Management system);

– system for preventing system accidents in the power system (Black out Prevention System);

– advanced distribution management system (Advanced Distribution Management System);

– distribution automation system (Distribution Automation System);

– Substation Automation System (Substation Automation System);

– distributed energy resources management system (Distributed Energy Resources Operation System);

– advanced energy metering infrastructure (Advanced Metering Infrastructure);

– Market places system;

– response to demand / load management (Demand Response/Load Management);

– electrical energy storage system (Electrical Energy Storage System).

The implementation of standards from the specified directions should take into account the new international standards of the relevant field of application that appeared after 2017, which is why they were not included in IEC TR 63097:2017.

4) achieving a consistent and uniform description of general requirements for various areas that make up the environment of "smart

networks" due to the adoption of the developed and implemented series of IEC SRD 62913 standards, which are devoted to issues of comprehensive formation of general requirements for intelligent networks.

5) taking measures to develop the standardization system in the field of electric power and Smart Grid by ensuring the participation of technical standardization committees in the work of IEC and CENELEC standardization technical committees.

6) development and approval of a plan of measures for the implementation of modern European and international standards in the field of development of "smart networks" for the development of the electric power system of Ukraine.

According to results of analysis of state of affairs regarding implementation of international and European standards in the field of Smart Grid in Ukraine, the need to create a Strategy for the implementation of such standards substantiated. A group of standards has been identified that describe the main principles of the application of Smart Grid systems, which are unifying and allow eliminate inconsistencies between other existing standards, to ensure their coordination. Implementation state analysis of basic and particularly important standards in Ukraine performed. The purpose of the Strategy formulated and its main tasks defined. The main directions of the implementation of the Strategy defined, among which the implementation of groups of standards for the normative is of primary importance ensuring the operation of Smart Grid functional systems, which is the basis of managing electric energy systems and electric energy markets. The implementation of such a Strategy will make it possible to create a national regulatory framework in Ukraine, which contains a complete list of national standards to ensure the reliable and efficient functioning and development of Ukraine's transmission and distribution systems based on the SmartGrid concept.

1.4. Conceptual basis for improving the methodology of environmental audit in the context of European integration

At the beginning of the twentieth century, accounting was detached from environmental issues. Accounting information posed a threat to the process of establishing an industrial society. The industrialisation policy led to a significant increase in the number of heavy industry enterprises, which increased the burden on the natural environment (Boichenko and others,

2017). It can be argued that today a large territory of Ukraine is characterised as an environmental hazard zone. Analysis of the literature shows that the anthropogenic impact on the territory of Ukraine exceeds the level of European countries.

Environmental audit has become the subject of research by many domestic and foreign scientists. Among domestic scientists, a great scientific contribution to the process of forming the theoretical and methodological foundations of ecoaudit was made by V.A. Borisova, T.P. Galushkina, N.V. Honcharenko, Ya.V. Meh, V.M. Navrotskyi, U.P. Novak, O.F. Savchenko, Yu.M. Satalkin, V.Ya. Shevchuk, Ya.O. Yakovenchuk, and others. Among foreign ones, it is necessary to note the scientific contribution of A. Endres, N.V. Pakhomova, I.M. Potravny, K. Richter, H.P. Serova, S.S. Timofeeva and others. However, despite numerous works in the field of environmental audit, there are still a number of unresolved issues that require attention.

The purpose of the study is to analyse scientific publications on the problems in the field of environmental audit in Ukraine and to summarise the need for its application at enterprises.

The assessment by business entities of environmental aspects related to their activities began to be actively used in Europe and the United States in the early 1970s. In the United States, due to the high rate of environmental accidents and disasters, the US federal law "On the National Environmental Policy" was adopted. After that, companies began to be held legally liable for environmental damage. The procedures for conducting these assessments resembled financial audits in terms of their external features and form and were therefore called audits, but only environmental audits.

Considering the environment as an increasingly important factor, large industrial corporations have placed their enterprises under internal control to assess whether they are a source of negative environmental impact. The task of the environmental audit was to inform the corporation's management board and shareholders about measures to comply with applicable environmental legislation and the risk of possible accidents, in terms of environmental impact.

In the 1980s, environmental audits became widespread and became a common practice in industrialised countries (the UK, the Netherlands, Sweden, and others). In 1989, the International Chamber of Commerce published a document that laid the foundations for internal environmental audit as a self-control procedure and an internal management tool. Internal

environmental audit is an element of the system of environmental protection measures at an enterprise and includes systematic inspections, supplemented by analyses, tests and control of the environmental impact of industrial processes. It defined environmental auditing as an in-depth, ongoing analysis of an enterprise's environmental activities, emphasising its voluntary nature. The approach proposed by the International Chamber of Commerce was recognised by industrialists, as it allowed managers to ensure control over the state of the environment at the enterprise, as well as to monitor the enterprise's performance in terms of environmental standards.

In 1990, the Commission of the European Communities issued the first draft of mandatory rules for environmental audits. The draft was criticised by the International Chamber of Commerce, some EU member states, and various international and national organisations. The criticisms included the possibility of interference in the organisation of the industrial sector, the mandatory nature of environmental audits, and the disclosure of environmental audit results to the public. In 1991, the Commission of the European Communities came up with new proposals and in October 1991, the final version of the rules for mandatory environmental audits was created. It provides for the creation of a system of environmental protection measures based on the conclusion on the environmental status of the enterprise.

This system of environmental protection measures includes a programme and plan of environmental protection measures, a system of impact monitoring of the environment, a system of environmental documentation, and the frequency of environmental monitoring. Documentation on the organisation of the environmental management system is approved by an official auditor.

In 1993, EU Directive 1836/93 approved the Environmental Management and Audit Regulations, which allow for the voluntary participation of industrial enterprises in the European Union's Environmental Management and Audit System. Companies that implement this system are entitled to use a special environmental emblem. Along with the Environmental Management and Audit Regulations, the UK has developed and implemented the BS 7750 Standard for Environmental Management Systems. The International Organisation for Standardisation has developed ISO 14000 international standards for environmental management of an enterprise. While Western countries already have

theoretical and practical experience in the use of environmental audits, Ukraine is just beginning to implement them.

Pollution of Ukraine's environment, including the air, water and land resources, has become critical. For example, about 1.5 billion tonnes of natural resources are used annually in the production process, which is almost 30 tonnes per capita. Such large volumes of resource use can be explained by the extensive nature of the exploitation of natural resource potential.

The quality of atmospheric air is determined by 22 indicators, including 8 heavy metals. The second most extensive system for monitoring the state of atmospheric air is the territorial units of the Ministry of Health of Ukraine with a preventive focus - regional centres for disease control and prevention.

As of 2021, according to monitoring observations, in urban areas, 4.2% of samples (7121 out of 170546) of atmospheric air contain pollutants in concentrations exceeding the maximum permissible concentrations (4.2% - 7684 out of 180913 in 2020, 4.0% - 8148 out of 204311 in 2019, vs. 3.8% - 9076 out of 240989 in 2018), in rural settlements - 05% (vs. 0.9% in 2020, 1.3% in 2019, 1.1% in 2018) (Natsionalna, 2021).

The data for the last 10 years on the share of studies of urban air exceeding the maximum permissible concentrations are shown in Table 1.5.

Table 1.5 – Share of studies of atmospheric air in urban settlements exceeding the maximum permissible concentrations, in %

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
of atmospheric air (total pollution index)	5,8	5,4	3,3	3,6	3,0	3,4	3,8	4,0	4,2	4,2
of atmospheric air for dust	10,2	6,6	6,5	5,2	5,1	5,0	5,8	6,5	6,7	6,5
of atmospheric air for carbon monoxide	5,5	2,7	3,3	4,6	4,0	5.5	6,2	5,6	5,2	5,8

Source: (Natsionalna, 2021)

Thus, the main threat to biodiversity is posed by human activity and the lack of effective environmental control, which leads to the destruction of the natural environment and threats to the existence of flora and fauna. An environmental tax is one of the most effective economic instruments of environmental policy that helps to address urgent issues, as well as to

stimulate the reduction of pollutant emissions and to make polluters more conscious of natural resources.

This raises the problem of administering the environmental tax, its distribution among budgets of different levels, as well as the efficient allocation of funds and their use for the relevant purposes.

Since the issue of reducing pollution in the environment is becoming more and more urgent every year, it is worth analysing the revenues accumulated by EU countries as a result of environmental taxation (Fig. 1.12).

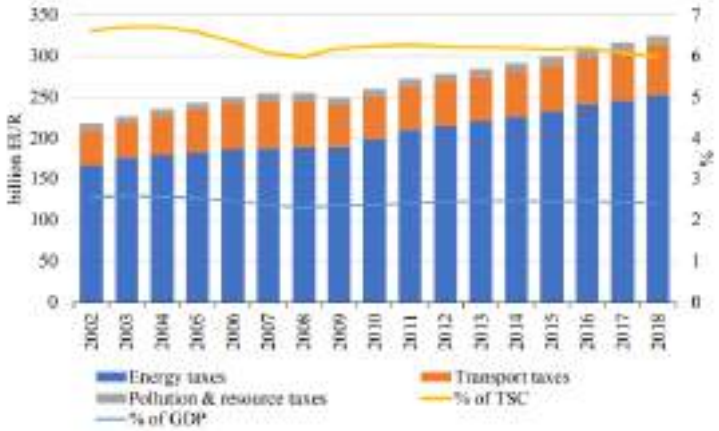

Figure 1.12 – Environmental tax revenues by type and total environmental taxes as a share of TSC and GDP, EU27, 2002-2018 (EUR billion, %)
Sorse: Environmental, 2021

The figure confirms the fact that the level of environmental pollution is rising, which proportionally affects the increase in environmental revenues. Thus, as of 2018, the total amount of environmental revenues was EUR 325.2 billion, while as of 2008, the amount of environmental payments was EUR 70.2 billion less. It is worth noting that energy taxes account for the largest share of the EU's environmental revenues, accounting for about 77.7% of the total as of 2018. In 2017, the share of such revenues was 77.4%, although the amount of energy tax revenues decreased by €7 billion in value compared to 2018. This situation is an indication that the number of industrial enterprises and power plants in the EU is increasing. As for the transport tax, its increase in the dynamics is not

significant, and the share of this tax in the total amount of environmental payments for 2002-2018 ranges from 18.9-22.1%. The pollution tax is the smallest share of total environmental revenues. Thus, its revenues amount to about EUR 10 billion annually, and this figure is expected to grow due to the development of the agricultural sector, which is the largest payer of this type of tax.The share of environmental revenues in GDP ranged from 2.3-2.6% in 2002-2018 (Environmental, 2021).

A detailed analysis also requires a comparison of the changes in the share of environmental taxes in GDP and the total amount of taxes and social contributions accumulated by EU countries (Fig. 1.13).

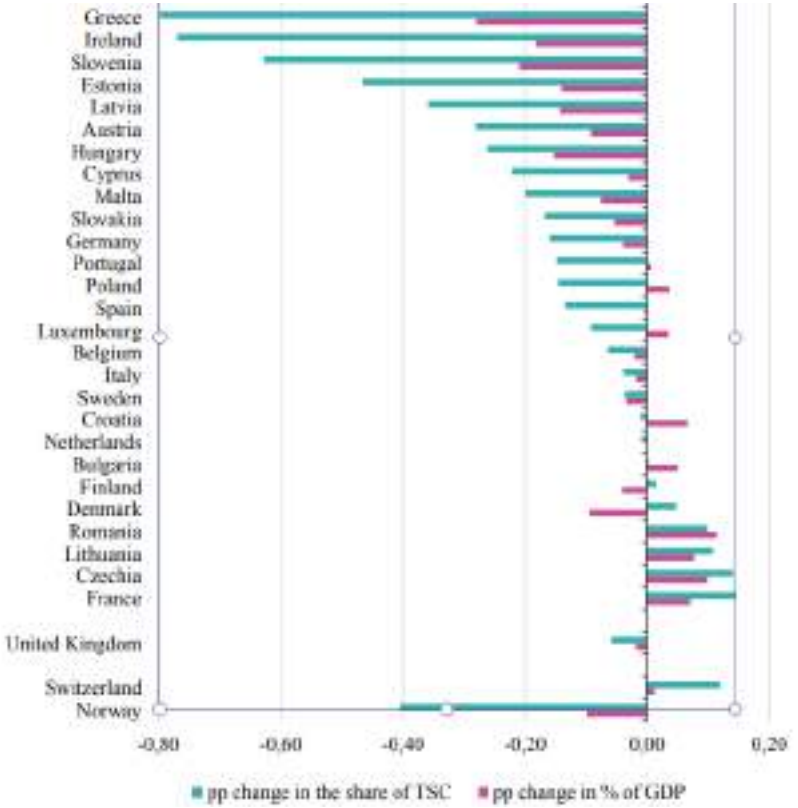

Figure 1.13 – Environmental tax revenues - change between 2017 and 2018 (in per cent)
Sorse: (Environmental, 2021)

Thus, the overall dynamics in the EU countries shows that the amount of environmental payments in 2017 was higher than in 2018, although in percentage terms this difference is not even 1%, but this fact may indicate either imperfections in the administrative mechanism or a reduction in anthropogenic impact on the environment.

This situation can be observed in such countries as Greece, Ireland, Slovenia, Estonia, Latvia, Austria, Hungary, Cyprus, Malta, Slovakia, Germany, Belgium, Italy, Sweden, the United Kingdom and Norway.

Countries such as: Romania, Lithuania, the Czech Republic, and France, there was an increase in environmental revenues in 2018 compared to 2017.

Particular attention should also be paid to those EU countries that have reduced the share of environmental revenues in GDP but increased it in the total amount of taxes and social contributions. These include Denmark and Finland. These countries are leaders in waste recycling and the reuse of raw materials. There are also those EU countries that, on the contrary, have reduced the level of environmental payments in the total amount of tax revenues but increased their share in the country's GDP, including: Portugal, Poland, Spain, Luxembourg, Croatia, the Netherlands, and Bulgaria (Environmental, 2021).

To date, Ukraine has developed and implemented the main elements of the economic mechanism for natural resources management and environmental protection. The most important of these are: environmental tax; environmental pollution charges; a system of fees for special use of natural resources (mineral, water, land, forest, biological); and compensation for damages caused by violations of environmental legislation. In 2010, the Tax Code of Ukraine was adopted. The Tax Code of Ukraine regulates relations arising in the field of collection of taxes and duties, in particular, defines an exhaustive list of taxes and duties levied in Ukraine and the procedure for their administration, taxpayers and duties, their rights and obligations, competence of controlling authorities, powers and duties of their officials in the administration of taxes and duties, as well as liability for violation of tax legislation. Environmental tax is a nationwide mandatory payment levied on the actual amount of emissions into the atmosphere, discharges of pollutants into water bodies, waste disposal, and the actual amount of radioactive waste temporarily stored by their producers.

In 2021, the environmental tax rates for all types of operations with pollutants have been increased by 10.1% in line with the inflation index

(consumer price index). The Tax Code of Ukraine was amended accordingly. The increased eco-tax rates were applied by taxpayers from 1 January 2021. The Taxpayers shall transfer the amounts of the Tax levied for emissions, pollutant discharges and waste disposal in the ratio determined by the Budget Code of Ukraine: 20% to the general fund of the State Budget (except for the environmental tax levied on carbon dioxide emissions from stationary sources of pollution, which is credited to the general fund of the State Budget in full) 80% to the special fund of local budgets 55% to village, town and city budgets, budgets of united territorial communities, 25% to regional budgets and the budget of the Autonomous Republic of Crimea 80% - to the budgets of Kyiv and Sevastopol.

Table 1.6 shows the dynamics of revenues by components of the environmental tax in Ukraine in 2016-2021, which shows an upward trend.

Table 1.6 – Indicators of environmental tax revenues for 2016-2021, billion UAH

	2016	2017	2018	2019	2020	2021
Environmental tax - total	4,7	4,4	4,6	5,5	5,1	5,4
emissions of pollutants into the atmosphere	2,99	2,41	2,40	2,47	1,92	2,07
Discharges of pollutants into water bodies	0,14	0,14	0,15	0,15	0,15	0,15
Waste disposal	0,79	0,86	1,06	1,02	1,05	1,13
Generation and/or temporary storage of radioactive waste	0,78	0,98	1,02	1,07	1,02	1,04
Emissions of carbon dioxide into the atmosphere	0,00	0,00	0,00	0,84	1,04	1,05

Source: (Environmental, 2021)

Thus, the table shows that a total of UAH 5,435,566,210 was paid in environmental taxes from 1 January to 31 December 2021. In 2016, the state budget received UAH 5 billion from environmental taxes. In particular, UAH 3.1 billion from the air emission tax, UAH 0.1 billion from the water pollution tax, UAH 0.9 billion from the waste disposal tax, and

UAH 0.8 billion from the tax on the creation and temporary storage of radioactive waste.

In 2017-2018, revenues from environmental taxes were lower - UAH 4.7 billion and UAH 4.9 billion, respectively.

In 2019, the state budget received UAH 6.1 billion from environmental taxes: UAH 2.7 billion for air emissions, UAH 0.2 billion for water pollution, UAH 1.3 billion for waste disposal, UAH 1.1 billion for radioactive waste generation and storage, and UAH 1 billion for carbon dioxide emissions.

In 2020, revenues from environmental taxes decreased again to UAH 5.1 billion. In January-November last year, the state budget received UAH 5.9 billion: UAH 2.2 billion for air emissions, UAH 0.2 billion for water pollution, UAH 1.4 billion for waste disposal, UAH 1 billion for the generation and storage of radioactive waste, and UAH 1.2 billion for CO2 emissions.

In 2021, revenues from environmental taxes decreased again to UAH 5.4 billion. In January-November last year, the state budget received UAH 5.4 billion: UAH 2.07 billion for air emissions, UAH 0.2 billion for water pollution, UAH 1.13 billion for waste disposal, UAH 1 billion for the generation and storage of radioactive waste, and UAH 1.05 billion for CO2 emissions. In January-October 2021, Energoatom paid the largest amount of environmental tax - UAH 782.9 million, which is 19.2% of the total amount of environmental taxes paid in Ukraine.

DTEK Zakhidenergo paid significantly less taxes - UAH 518.2 million (12.7% of the total). Centrenergo paid 9.6% of the total amount of taxes - UAH 392.3 million.

DTEK Dniproenergo paid UAH 301.4 million in environmental taxes, which is 7.4% of the total amount. DTEK Vostokenergo paid a little less - UAH 281.5 million (6.9%). In total, in January-October 2021, companies paid UAH 4 billion 85 million in environmental taxes across Ukraine. The record was set in Kyiv, where companies transferred UAH 1 billion 399.4 million to the state treasury. The largest share, i.e. 55.9%, was paid by Energoatom (UAH 782.9 million).

Dnipropetrovs'k region was ranked second, with companies paying UAH 611.6 million in environmental tax. The largest share was paid by ArcelorMittal Kryvyi Rih - UAH 251.3 million (41.1%).The least amount of environmental tax was paid by companies in Chernihiv (UAH 2.6 million) and Zakarpattia (UAH 3.9 million) regions [Skilky, 2022].

The established practice of EU countries and international environmental organisations is to review (adjust) the strategic objectives of environmental policies every five to six years based on the results of an analysis of the effectiveness of their implementation. In view of the above, the Ministry of Ecology and Natural Resources has developed a draft Law of Ukraine "On the Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the Period up to 2030". The Law of Ukraine No. 2697-VIII dated 28 February 2019 approved the Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the Period up to 2030 (hereinafter referred to as the Environmental Policy Strategy), which entered into force on 31 March 2019 and was put into effect on 1 January 2020.

The mechanism for implementing the Environmental Policy Strategy is the National Environmental Action Plan for 2021-2025 (hereinafter referred to as the National Plan) developed by the Ministry of Ecology and approved by the Cabinet of Ministers of Ukraine dated 24.03.2022 No 276-p, the implementation of which will stabilise and improve the state of the environment and create a natural environment that is safer for the life and health of the population.

The National Plan defines measures to implement the state environmental policy in order to preserve natural ecosystems, maintain their integrity, improve the quality of life and health of the population, ensure environmental safety, and implement a balanced system of nature management for sustainable development of society. These measures are aimed at implementing the goals and objectives of the state environmental policy, namely: formation of environmental values and principles of sustainable consumption and production in society; ensuring sustainable development of Ukraine's natural resource potential; ensuring integration of environmental policy in the decision-making process on social and economic development of Ukraine; reducing environmental risks to ecosystems and public health to a socially acceptable level; improvement and development of the state environmental management system. The Resolution of the Verkhovna Rada of Ukraine № 457-IX dated 14.01.2020 approved the Recommendations of the parliamentary hearings on the topic: "Priorities of the Environmental Policy of the Verkhovna Rada of Ukraine for the Next Five Years", which entrusted the Ministry of Ecology together with the central executive authorities, whose activities are directed and coordinated by the Minister of Environmental Protection and Natural Resources of Ukraine:

Order of the Ministry of Environment № 621 dated 27.09.2021, registered with the Ministry of Justice of Ukraine on 13 October 2021 under № 1343/36965, approved the Instruction on electronic timber accounting, which establishes the procedure for electronic timber accounting by forest owners and permanent forest users.

Order of the Ministry of Ecology № 153 dated 15.03.2021 approved the General Methodological Recommendations on the Content and Procedure for Preparing Environmental Impact Assessment Reports.

One of the most important strategic documents in the implementation of environmental policy was the Decree of the President of Ukraine № 111/2021 On the Decision of the National Security and Defence Council of Ukraine of 23 March 2021 "On Challenges and Threats to the National Security of Ukraine in the Environmental Sphere and Priority Measures to Neutralise Them".

The legal framework for environmental audits in Ukraine is set out in the Law of Ukraine "On Environmental Audit". According to Article 1 of this Law, "environmental audit is a documented, systematic, independent process of assessing the object of environmental audit, including the collection and objective evaluation of evidence to determine whether certain activities, measures, conditions, environmental management system and information on these issues comply with the requirements of Ukrainian legislation on environmental protection and other criteria of environmental audit" [About the environmental, 2004]. Prior to the adoption of this Law, despite the fact that eco-audit activities were actually carried out, there was no such term in Ukrainian legislation.

According to Art. 1 of the Law, "environmental audit is a documented systematic independent process of assessing the object of environmental audit, including the collection and objective evaluation of evidence to determine the compliance of certain activities, measures, conditions, environmental management system and information on these issues with the requirements of Ukrainian legislation on environmental protection and other environmental audit criteria" [Pro ekolohichnyi, 2004].

Other regulatory documents governing environmental audits include;

The Law of Ukraine "On Environmental Protection" dated 25 June 1991, № 1264-XII (the "Law № 1264");

The Law of Ukraine "On Privatisation of State and Communal Property" dated 18 January 2018 № 2269-VIII (hereinafter referred to as the Law № 2269);

State Standards of Ukraine DSTU ISO 19011- 2003 "Guidelines for the Audit of Quality Management Systems and (or) Environmental Management";

DSTU ISO 14001:2015 "Environmental management system";

ISO 14015:2005 "Environmental Assessment of Production Facilities and Organisations", taking into account the recommendations of the World Bank and the provisions of the Environmental Audit Protocol of the European Bank for Reconstruction and Development.

Studying the works of domestic and foreign scholars, we distinguish two main areas of understanding the essence of environmental audit: - as a type of environmental control; - as a legal mechanism for ensuring safety in the environmental sphere.

T., Poltavets F., Tulina E. note that environmental audit is a process of assessing the compliance of the audited object with the requirements of environmental legislation [Bigun and others, 2020].

Kulyk R.R. believes that the prerequisites for the emergence of environmental audit in Ukraine are primarily

- Firstly, awareness of global environmental problems and recognition of the priority of their solution along with economic and social problems;

- secondly, the process of Ukraine's integration into the global community.

Another relevant reason for the introduction of environmental audits, according to Kulyk, is the tightening of requirements for the design and assessment of pre-design and design materials that Ukrainian companies have faced in connection with the enactment of the Law of Ukraine "On Environmental Protection". Namely, any pre-design and design decisions should be considered in the context of the actual environmental situation in the area of the planned activity. "Isolated" decisions cannot be favourably assessed by an environmental impact assessment. An appropriate environmental audit programme can provide the necessary information to the project owner or designer [Kulyk, 2007].

A number of authors provide an interpretation of the concept under study based on the relevant definition in the Law of Ukraine "On Environmental Audit", namely "environmental audit is a documented systematic independent process of assessing an object to determine the compliance of certain activities, measures, conditions, environmental management systems and information on these issues with the requirements

of the legislation of Ukraine on environmental protection and other environmental audit criteria" [Sahaidak, 2007; Shram, 2013].

Thus, summarising the above, we believe that environmental audit is the process of establishing compliance of the audited object with the requirements of the environmental legislation of Ukraine and other environmental audit criteria.

Article 8 of the Law sets out the purpose and main objectives of environmental audit. The goal is to ensure compliance with environmental legislation in the course of economic and other activities. However, according to some scholars, Article 12 of the Law contains a provision that prevents the achievement of the above goal: environmental audit in Ukraine exists in two forms - voluntary and mandatory. A mandatory audit is carried out at the request of the concerned executive authorities or local self-government bodies in respect of objects or activities that pose an increased environmental hazard, in accordance with the list approved by the Cabinet of Ministers of Ukraine, in cases of bankruptcy; privatisation, concession of objects of increased environmental hazard; transfer or acquisition of state or municipal property; transfer of state or municipal property for long-term lease; creation of a new company on the basis of objects of increased environmental hazard. Although this list is not exhaustive, it should be noted that it is rather narrow and cannot cover all enterprises that cause or may cause environmental damage [Bigun and others, 2020].

Most of the enterprises that cause the greatest environmental damage are privatised. These include mining, metallurgical, chemical and energy companies. It is economically more profitable for business owners to pay for environmental pollution and waste disposal than to comply with all environmental legislation.

According to the legal framework, voluntary environmental audits are carried out in respect of any facilities at the request of the business entity concerned with the consent of the manager or owner of the environmental audit object.

A mandatory environmental audit is carried out in the following cases:

– bankruptcy;

– privatisation, concession of objects of high environmental hazard, except in cases specified by law;

– transfer or acquisition of state or municipal property;

– transfer of state or municipal property for long-term lease;

– establishment of joint ventures on the basis of state and municipal property;

– environmental insurance of facilities;

– termination of a production sharing agreement in accordance with the law;

– in other cases provided for by law.

Environmental audits at such enterprises can only be carried out on a voluntary basis with the consent of the head of the enterprise, according to Article 12 of the Law. Even if the company has agreed to such an audit, Article 8 still restricts the procedure. Article 8 stipulates that "specific tasks of the environmental audit shall be determined by the customer in each individual case based on its needs". And according to Article 3, the customers may be interested central and local executive authorities, local self-government bodies, other legal entities, as well as individuals. In other words, they can also be the owners of enterprises or their managers and other organisations, not just government agencies. Thus, it is the customers who determine the scope of the audit, which may make the environmental audit incomplete and limited

According to many scholars, the experience of environmental audit proves that its effectiveness depends on three main factors:

– the depth of interest of the management and owners of the enterprise in conducting the audit;

– transparency, openness and integrity of the company's specialists in analysing all environmental aspects;

– joint, coordinated work of the audit team and the company's specialists.

In other words, the effectiveness depends on the interest of the company's management, not on the interest of the state. We support the opinion of scientists that this is one of the "weaknesses" of the legislation on environmental audit and propose to amend it to make mandatory environmental audit possible at enterprises that threaten or may pose a threat to the environment, regardless of ownership, and the conclusions of such an audit should be binding on the heads of enterprises. In case of failure to comply with such conclusions, the managers should be held liable in accordance with the law [Bigun and others, 2020].

We also support the opinion of scientists that the legislation does not contain a list of specialities, after mastering which a person can apply for an environmental auditor certificate, leaving the decision on this issue to the discretion of the Ministry of Environmental Protection of Ukraine,

which does not contribute to an objective resolution of the case. There are a number of other issues that need to be addressed, including what can be considered a "related" area to environmental protection and others. In order for a legal entity to qualify for inclusion in the Register of Environmental Auditors and Legal Entities entitled to conduct environmental audits, it is sufficient, firstly, to provide for the relevant type of activity in its charter, and secondly, to have at least one environmental auditor on staff. Ukrainian legislation also contains certain prohibitions on conducting environmental audits. They apply to executive authorities, local self-government bodies, and persons who are prohibited by law from carrying out business activities. Environmental auditors are prohibited from conducting environmental audits of business entities if they hold shares in these entities or otherwise have a direct relationship with them [Shram, 2013].

We have analysed the existing standard methodology for conducting an environmental audit and identified a number of tasks that need to be addressed. The main task, the solution of which will allow environmental audit to become an effective integrated mechanism for managing environmental and economic activities of an enterprise and the risks associated with them, is to improve the methodological framework for conducting environmental audit, since it is currently outdated and at some stages is absent altogether.

Another task is to automate the environmental audit procedure, i.e. to present it in a more understandable and accessible form for both automation and human users. Solving this task will maximise the objectivity and reliability of decisions based on the audit results, i.e. reduce the influence of subjective factors of the auditor (his/her knowledge and experience, as well as personal relations with the audit client and the company itself). To this end, the scheme of the environmental audit model should be presented in the form of an algorithm in which each stage is carried out sequentially, and if necessary, it is possible to return to the previous ones and repeat the actions.

An algorithm is an organised sequence of actions permissible for a certain performer that leads to a certain result. In this case, the model of environmental audit should include the solution of not only environmental, but also economic and social tasks. These objectives should be addressed inseparably and closely interconnected, since human economic activity cannot be viewed as something isolated from the environment.

In order to make environmentally sound management decisions, it is necessary to take into account all key aspects of business activities.

Therefore, environmental audit should be integrated into the programmes and methods of existing types of audit (production audit, financial audit, compliance audit), combining them into a single complex. Based on this, we propose to expand the content of the environmental audit procedure (Fig. 1.14).

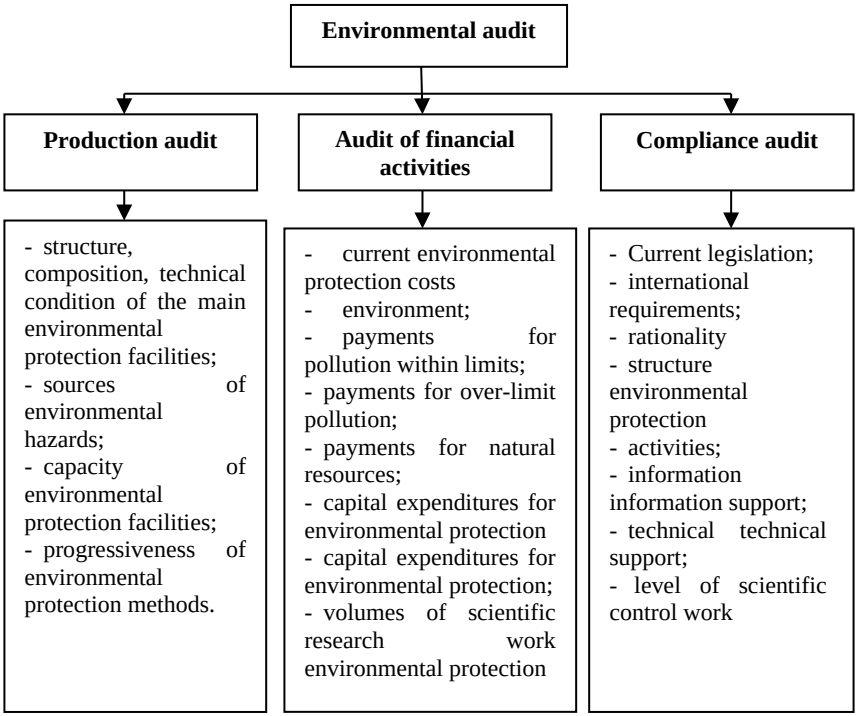

Figure 1.14 – The expanded content of economic activity
Source: author's development

The main objectives of the integrated environmental audit model we propose are to collect reliable input information on the business activities of the object, make environmentally sound business decisions and compensation measures on its basis, aimed at reducing environmental, social, economic and environmental risks.

The model allows solving a number of functional tasks, such as corrective actions, operational control and development strategy. Corrective action tasks determine the need to issue recommendations aimed

at eliminating the shortcomings in the company's operations identified in the course of the environmental audit. Operational control involves ongoing, internal audit directly in the course of the facility's business operations in order to avoid "environmental mistakes" and costs, as well as to develop and select environmentally sound solutions. On this basis, the auditor makes recommendations on the optimal solution or alternative solutions. The strategic objectives of environmental audit are to substantiate the company's environmentally friendly development strategy (its policy) in accordance with development plans based on the data obtained during the audit) (Kuzmenko, 2013).

The scheme of the environmental audit model includes 4 main blocks:

1. Block of initial data. In the process of conducting an environmental audit, baseline data is collected in two areas: environmental and financial.

The eco-auditor receives data on the environmental area from the main environmental documentation, which allows to assess the negative impact of the business entity on the environment. If there is a lack of information, the eco-auditor may use additional methods of data collection (employee surveys, visual inspection of the area, etc.).

Financial data is collected from the main accounting documentation (accounting reports, salaries, accounts, funds, cost estimates), which allows to assess the facility's costs for environmental protection measures.Taking into account the need to process large amounts of diverse information, the model has formed databases that use an operating management system as a means of accumulating and further processing it, which allows to ensure the objectivity and complexity of the process of making sound management decisions. We offer databases of source data in three areas:

– social – social parameters in the surrounding area (number of employees who fell ill in the surrounding area as a result of the impact of the economic entity; number of employees receiving sickness benefits; amount of benefits, etc;)

– economic – economic parameters of the economic entity (environmental protection costs, pollution damage, payments for negative impact);

– environmental – parameters that characterise the economic activity of the facility (pollutants generated, demand for raw materials and supplies, types of finished products, etc.), as well as characteristics of the air, water and soil conditions in the area where the facility is located.

2. Calculation block. Initially, the environmental auditor specifies the object of the integrated environmental audit, its goals and objectives. The scope, type of impact and types of pollution sources for each environmental component should be taken into account. This block also includes working with the criteria for assessing the effectiveness of the environmental audit.

To simplify the work with the criteria, it is necessary to solve the problem of their optimisation. There are two ways to solve this problem:

– the single-criteria optimisation task is to develop a comprehensive environmental and economic criterion on the basis of which decisions on environmental audit will be made;

– a multi-criteria optimisation task involves working with an unlimited number of criteria, but another task arises - making a decision on environmental audit. Therefore, it is necessary to develop methodological support for the task of selecting the main criterion by which the assessment will be carried out.

Obviously, when conducting an environmental audit, the absence of restrictions on the number and presentation of (quantitative, heuristic) criteria is preferable, as it allows for systematic and objective assessment of possible financial, environmental and social impacts of business activities. However, this, in turn, creates basic conditions for further information processing, including parametric multifactoriality and the impossibility of reducing parameters to a one-dimensional form. At the same time, work with the criteria for assessing the effectiveness of environmental audit is carried out separately for each of the business areas of the business entity. Each area of activity has its own set of criteria for assessing the effectiveness of environmental audit, and this set may also vary depending on the goals, objectives and objects of the audit.

At this stage, it is necessary to solve a multi-criteria task, which is reduced to working with an unlimited number of criteria. The proposed methodology for conducting an environmental audit allows analysing the environmental and economic activities of an enterprise. In view of this, it is proposed to divide the criteria for assessing the effectiveness of environmental audit into two areas: environmental and financial. The financial area will include economic, environmental and economic, as well as social criteria, since social damage is assessed by economic indicators. The environmental area includes environmental criteria that characterise the state of the environment in the area of the enterprise under review.All criteria can be systematised as follows (Fig. 1.15).

The acquired set of criteria for assessing the effectiveness of an environmental audit is a basic one that takes into account all aspects of the company's business activities. This set of criteria can be simplified or supplemented by the environmental auditor in each case, depending on the goals, objectives and objects of the audit (refined set of criteria). Taking into account the entire variety of criteria is a rather complicated process. One of the most effective methods of risk assessment in these conditions is a matrix data aggregation scheme using the theory of fuzzy sets.

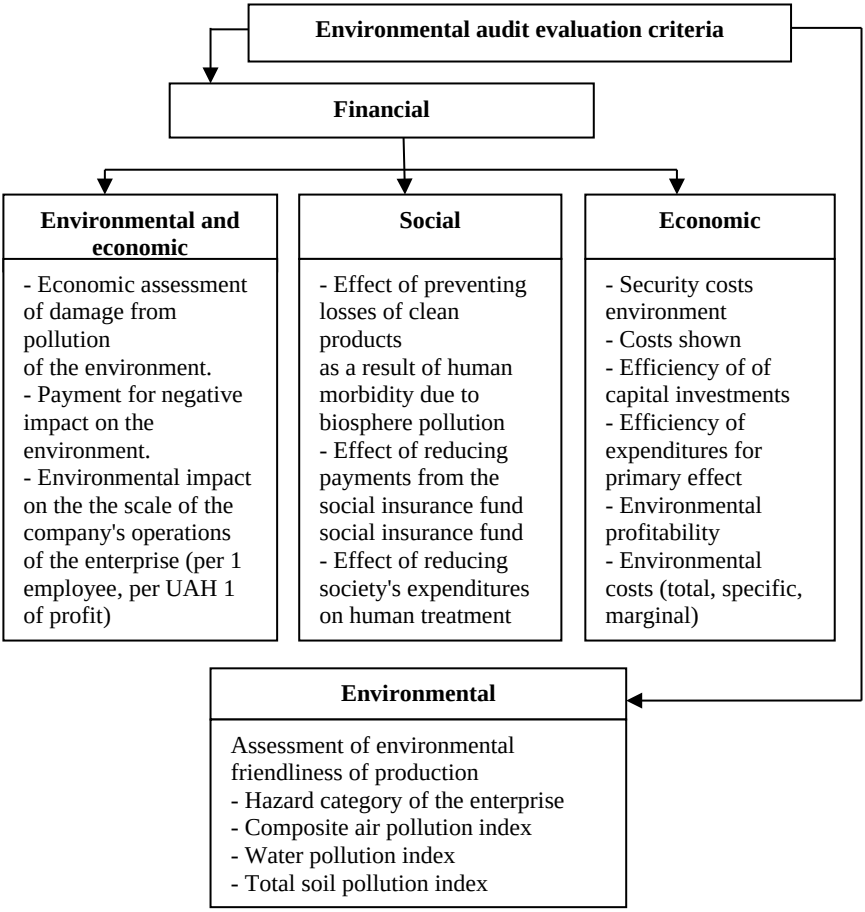

Figure 1.15 – Groups of criteria that characterise the consequences of economic activity within the framework of an environmental audit. Source: author's development

It will allow for the most effective assessment of the criteria that characterise the consequences of economic activity within the framework of environmental audit and bottlenecks in the company's economic activity, as well as take into account the opinion of stakeholders when drawing up objective conclusions on environmental audit and compensation measures. At the same time, the main criterion for the assessment will remain environmental.

3. Determination of significance. At this stage, the methods of environmental and financial aspects of environmental audit are considered jointly.

In this block, taking into account the previously systematised set of criteria, the quantitative assessment of the levels of relevant types of risks of negative consequences of economic activity is carried out. The significance can be determined by any method known to the environmental auditor, for example, comparison with averages, ranking by significance scales, etc. However, a comparison with environmental standards, such as quality standards, permissible impact standards, and DSTUs, must be made.

4. Data output block. Based on the obtained values of risk indicators, the eco-auditor determines the level of financial, environmental and social consequences of economic activity and develops a strategy for their management, based on the principle: as low as reasonably achievable. The results of risk control (scaling) include a variable choice between their preservation, reduction (development of compensatory measures) or transfer (insurance). This implies the maximum possible reduction of the risk level, which is achieved at the expense of the actual, but often limited resources of the enterprise. The peculiarity of the proposed approach is that it focuses not only on strict environmental standards, but also on solutions that are reasonable from a social and economic point of view. At the same time, the form of presentation of the data obtained should ensure comprehensive knowledge of the information and, if necessary, allow for clarification of some of it, as well as be accessible for understanding.

Improving the methodological framework for conducting an environmental audit will allow it to become an effective and reliable integrated mechanism for managing the environmental and economic activities of an enterprise and the risks associated with them, as well as to choose the best option for compensation measures within the framework of production and environmental management.

1.5. State regulation of innovative development of the region's agriculture

In the conditions of globalization, the development of the economy is based on the use of high technologies, the growth of intangible investments, new information and communication requirements.

Innovative development and scientific and technical progress, which allow continuous renewal of production on the basis of mastering the achievements of science and technology, are the most important strategic priorities for the development of the agro-industrial complex in modern conditions.

The main goal of innovative development is to increase the technological and technical levels of production and processing of agricultural products on the basis of high-quality new technology, as well as the creation of agro-industrial production, focused on the processing and export of highly profitable food products, competitive on the domestic and foreign markets.

To achieve the specified goal, the monographic (literature review), graphic and tabular (visualization of digital data), analysis and synthesis, abstraction, generalization (for the formation of the author's vision of the role of innovative activity in the development of enterprises), abstract-logical (formation of conclusions, etc.) methods used in this article).

The study of the innovative development of the agro-industrial complex (AIC) and the study of various aspects of state regulation and support of innovative processes was carried out in the scientific works of such prominent domestic and foreign economists.

However, some important issues of the formation and development of the methodical and practical basis of the state regulation of the innovative development of the agricultural industry in the conditions of structural and innovative transformations of the economy have not yet received adequate coverage. First of all, this concerns the study of theoretical aspects of the choice of forms and methods of state stimulation of innovative transformations in the agricultural sector.

Just as in the agro-industrial complex, the trends in the development of innovative processes are directly determined by the political situation in the country, socio-economic development, business conditions, and the investment and innovation climate, the role of the state in regulating the impact of these processes on the growth rates of agricultural production is large enough to be underestimated . And for the agrarian regions of

Ukraine, including Vinnytsia, the innovative development of the agricultural industry, aimed primarily at increasing the competitiveness of agro-industrial production.

Innovative development is a chain of implemented innovations and inventions, which is complex in nature, as it includes areas that affect the overall result (management, marketing, personnel training, finance, sales, etc.).

Innovative development can also be considered as the most important factor in ensuring the competitiveness and economic growth of the region, which determines the level of competitiveness of products, enterprises and the region as a whole.

The influence of regional features on the innovative development of the region is manifested in the specificity of its directions and content. Resource, innovation and scientific and technical potential, as well as industry structure, resource base, standard of living of the population, educational complex and natural, historical, ethnic, economic and social conditions in each region have their own characteristics.

Innovative development in the agricultural sector is distinguished by a variety of regional, branch, functional, technological and organizational features. Therefore, the rational use of the potential of regions by activating their own scientific and technical resources is one of the most universal levers for increasing the efficiency of innovative activities in the agricultural sector of the region.

In many cases, agro-industrial complex enterprises continue to use morally outdated means of production, which in turn imply the use of simplified technologies both in agriculture itself and in related industries of processing, storage and sale of agricultural products, which inevitably leads to a significant decrease in labor productivity in comparison with the best world analogues. Innovations in human capital, despite all the obvious importance of this direction, are carried out extremely slowly, which, naturally, complicates the general increase in the production of agricultural products (Bondarenko V. Mazur A., Mazur S. 2018).

In general, four main reasons for the lack of innovation in the agricultural sector can be identified (Fig. 1.16).

First, the lack of funds for the modernization of production and the implementation of the latest technologies. Secondly, the lack of demand for innovative products and specific finished products of universities. Thirdly, the inertia of businessmen; employed in agriculture, especially among

small producers, farmers: Another reason is the lack of interaction between the authorities and business on these issues.

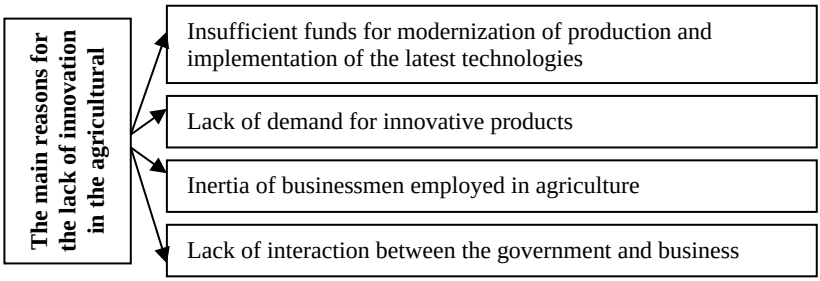

Figure 1.16 – The main reasons for the lack of innovation in the agricultural sector
Sourse: designed by the authors

Innovative development of the agricultural industry is a constant flow of transformation of scientific research and development into new or improved products, materials, new technologies, new forms of organization and management and bringing them to use in production for the purpose of obtaining an effect.

Analyzing the conditions and factors that affect the innovative development of the agricultural industry, they can be divided into negative ones that restrain innovative development and positive ones that contribute to the acceleration of innovative processes (Alekseieva K.A. 2008)

The conditions and factors contributing to the innovative development of the agro-industrial complex are the availability of natural resources, significant scientific and educational potential, a capacious domestic food market, and the ability to produce ecologically safe, natural food products.

Negative conditions and factors include:

– weak management of scientific and technological progress, lack of close interaction between the state and private business.

– a sharp reduction in costs for agricultural science.

– unpreparedness of personnel.

– low marketing work.

– low level of solvent demand for innovative products.

– a sharp decrease in the financing of activities related to the development of scientific and technical achievements in production and corresponding innovation programs.

– until now, the mechanisms that stimulate the development of the innovation process in the agricultural sector and others have not been developed.

– departmental disunity and weakening of the scientific potential of agricultural science.

The war hit the weakest points of the agricultural sector in Ukraine and the world. The prices of fertilizers and fuel have increased significantly, the area of agricultural land has decreased, the drop in exports from Ukraine has led to a shortage of grain and sunflower oil in the world, and for Ukrainian producers - to a decrease in income.

A crisis with similar consequences occurs in world history not for the first time and not for the last time. How can agriculture become less vulnerable? More than ever today, it is necessary to continue the development of innovative approaches and technologies. Of course, innovation is not the first thing when it comes to the physical survival of the population in the country, but high-quality resources during the sowing time have shown their effectiveness. Some technological solutions are so effective that their payback is half a year to a year.

Domestic agricultural science is characterized by a high degree of complexity of the organizational structure and departmental disunity, a variety of forms of scientific, technical and innovative activity, a significant specific weight in scientific research of problems that have a regional, branch and inter-branch character, a long duration of research of some problems, related to the reproductive process. This specificity creates certain difficulties in the management of agrarian scientific research and agrarian science in general.

In developed countries, the continuously progressive improvement of socio-economic development based on scientific and technological innovations is ensured by the state innovation policy based on the mechanisms of support and stimulation of innovative activity. Innovative development, aimed at the introduction of high technologies, new forms of work organization and management, advanced inventions and achievements of scientific and technical progress, becomes a decisive condition for dynamic socio-economic development (Boleiko Yu.O. 2014)

To overcome the backwardness of the innovative development of the agricultural industry, a state innovation policy is needed, based on a deep

analysis of the global experience of innovative development, the features and trends of the socio-economic and scientific and technical development of the economy, its innovative potential, and the determination of opportunities for the interaction of participants in the innovation process. It is also necessary to find and create such organizational forms of innovative activity that would ensure effective interaction of its participants, continuity and unity of the process of creation and commercialization of an innovative product.

Therefore, the main priority of scientific, technical and innovative development in the agro-industrial complex should be state support for fundamental and applied science with a focus on the implementation of scientific developments in the agro-industrial complex.

Administrative and regulatory measures are taken at the state and regional levels of government to increase the innovative activity of various business entities of the agro-industrial complex. Today, given the limited financial support from the state, agricultural enterprises are forced to find their own solutions to improve the efficiency of their development. For this reason, the introduction of innovations is increasingly considered as one of the only methods of increasing competitiveness, achieving and maintaining economic indicators at the appropriate level. However, the low level of innovative development, inefficiency of management, lack of necessary experience in carrying out innovative activities in market conditions slow down the processes of forming an effective mechanism for managing innovative activities.

In this way, it is possible to formulate the problems that hinder the innovative development of enterprises of the agro-industrial complex:

– imperfection of normative and legal regulation;

– lack of consistency in the adoption of management decisions at both the state and regional levels of government, in the direction of managing innovative development and forming measures to increase indicators of innovative development;

– orientation of scientific and research organizations to the fulfillment of state orders;

– inefficiency of the integration of science and production (Peltek, 2009; Salikhova, 2011; Vyshnivska, 2017).

State stimulation and support for innovative development of the agro-industrial complex should be carried out in the presence of institutional mechanisms of regionalization of state regulation of the agricultural sector, aimed at overcoming the most important barriers to

innovative development and based on methods of direct and indirect stimulation in accordance with Fig. 1.17. (Vyshnivska & Mitenko, 2021).

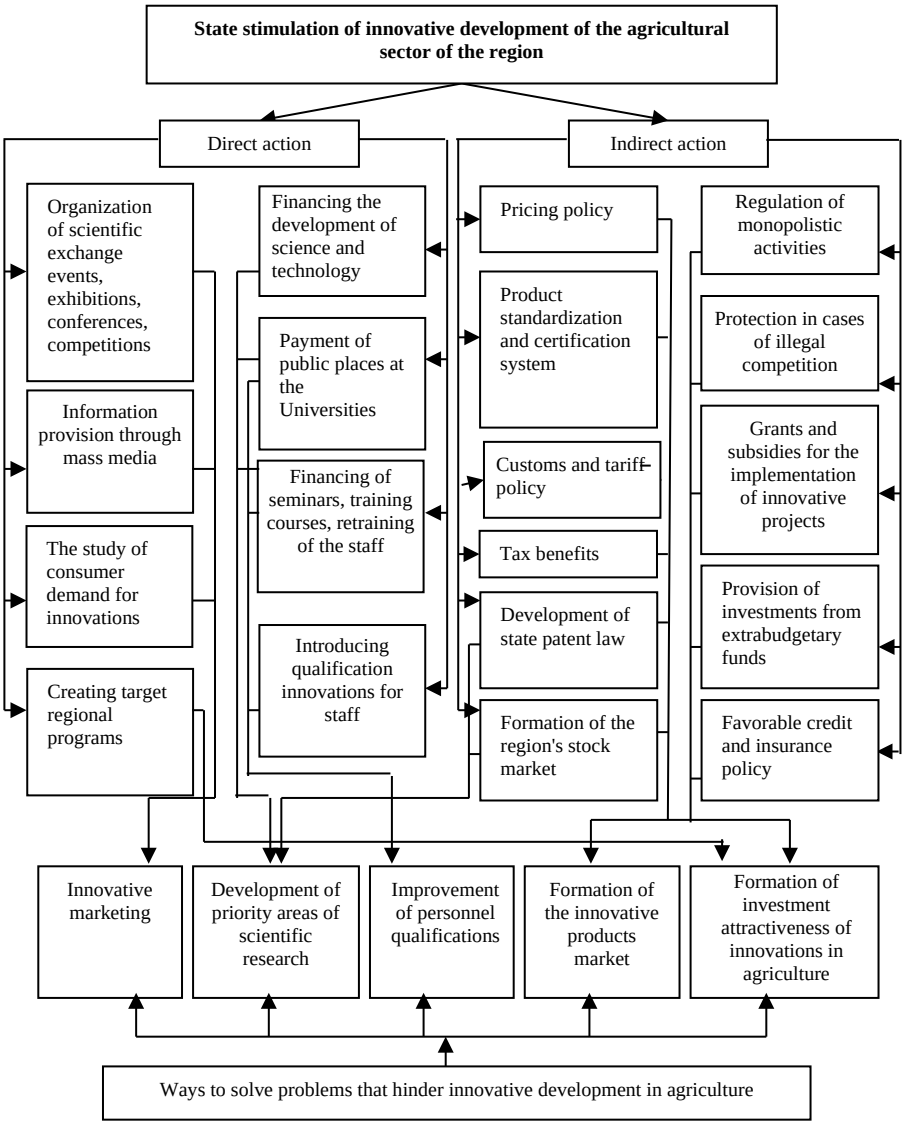

Figure 1.17 – State stimulation and support for the innovative development of the agro-industrial complex

Innovative marketing related to market research, management and regulation of production and sales of an innovative product plays an important role in the activation of innovative development. In accordance with a specific marketing strategy, the price policy of the agribusiness enterprise for innovative products is being built. And its pricing is influenced by numerous factors (market type, company strategy, supply and demand, buyer's income level, government leverage, etc.). The main directions of innovative development in the agricultural sector should be considered: increasing the amount of financing of agricultural science, forming and implementing programs of fundamental and applied scientific research, their investment support, cooperation with the international scientific community (Vyshnivska & Dursenova, 2021).

As world practice shows, scientific organizations and higher educational institutions should function in a complex, linking together the training of personnel with the conduct of fundamental and applied research. In addition, intensive development of market relations leads to closer contact of scientific institutions of agro-industrial profile with universities of the country that train relevant specialists. The first priority should be state support for fundamental research and the most important applied developments, focused on quick returns (Budkin, 2013).

The main problems of agricultural science are the low level of funding, the lack of material and technical resources and equipment, the weak innovative activity of scientific institutions, the underdevelopment of the information and service spheres of scientific services, the outflow of young qualified personnel to other fields. In order to improve the management of innovation processes, it is necessary to train specialists in innovative and information technologies; reorganization of the innovative structure of higher educational institutions aimed at improving the management of intellectual property, creation of a division for coordination of innovation processes. (Pryshliak et al., 2022; Salikhova, 2011)

The weak link in the development of innovative activity is the underdevelopment of the market for innovative products, the lack of an effective organizational and economic mechanism for managing innovative processes. Scientific and technical developments are far from always a product ready for effective implementation in agro-industrial production. There are no special organizations engaged in studying the demand for innovations. When selecting innovative projects, their economic expertise is not conducted, development efficiency indicators are not considered, and

schemes for promoting the obtained results into production are not worked out (Abuselidze et al., 2023)

The main task of the innovation market is to promote innovative products in order to meet the needs of the agricultural sector, capable of providing and receiving additional economic, technological, social and environmental effects.

The main sources of investment in innovation in the agricultural sector could be (Karakai, 2009):

- own financial funds of enterprises;
- funds from the state budget, budgets of the region and municipal entities;
- funds of special extra-budgetary funds;
- loans (bank, state loans on a revolving basis);
- funds of the leasing fund;
- cash funds of financial structures (investment and insurance companies, etc.), free funds of the population;
- foreign investments.

The problem of financing innovations will be able to be solved by venture capital funds - these are commercial organizations engaged in so-called risky financing. They select promising innovative projects and provide them with money for development. When the enterprise starts to make a profit, the fund receives part of the income. Such venture funds have been working successfully all over the world for a long time. The influx of capital will be able to launch many potentially profitable projects. (Bondarenko et al., 2019)

The limitation of market mechanisms in the field of creation and development of scientific and technical developments, the high-risk and unattractive activities of the agro-industrial complex cause the need for active support of innovative processes by the state. Of course, state intervention cannot and should not be comprehensive and replace market relations. State support should be concentrated on the financing of targeted innovation programs, research and production farms, where the practical application of scientific and technical developments in specific conditions is tested. Budgetary funds should also be provided to those agro-industrial complex enterprises that produce competitive products that are in steady demand. The basis of the state policy regarding the innovative development of the agricultural sector is the creation of conditions for the development of agricultural sector production and, on this basis, ensuring food security, maximum employment of the population and increasing its well-being

(Maslak et al., 2008). The goals of supporting the innovative development of the agro-industrial complex are reflected in the following diagram (Fig. 1.18).

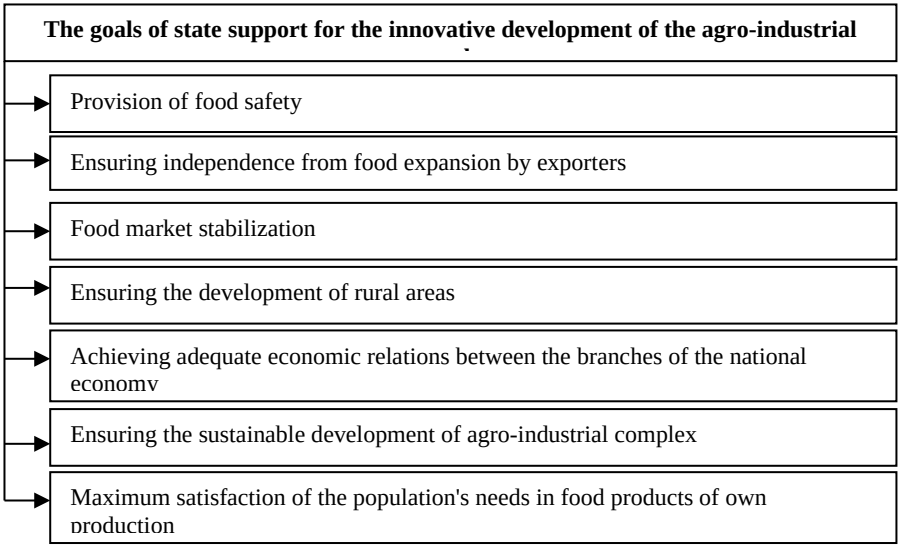

Figure 1.18 – Goals of supporting the innovative development of the agro-industrial complex
Source: designed by the authors

State regulation of innovative development includes the following functions and corresponding forms of state innovation policy: determination of development directions, forecasting and planning of the innovation sphere; accumulation and distribution of funds for innovation, development and implementation of regional policy in the field of innovation; regulation of international relations, scientific and technical cooperation, technology transfer; integration of science with production and education; tax, credit, legislative stimulation of the development of innovations; formation of the legislative, infrastructural and personnel base of innovative activity, creation of networks of state and private organizations for innovation support; solving social and environmental problems with the help of innovations (Vyshnivska, 2022).

Therefore, the implementation of state support for the innovative development of the agricultural industry should include: regulatory and

legal support for innovative activities; protection of intellectual property objects and their introduction into economic circulation; comprehensive development in the production of scientific achievements and best practices; development of the infrastructure of the innovation process, systems of certification and promotion of scientific and technical developments, training and retraining of personnel; state support of rural commodity producers in order to increase their solvency and the ability to carry out innovative activities; improvement of the competitive examination system and selection of innovative projects, programs for their implementation in agro-industrial production; formation of an economic management mechanism and stimulation of innovation processes at all levels; property reform and development of entrepreneurship in innovative activities.

Further research should be aimed at determining the functional role of the state as an organizer and coordinator of structural changes in the field of activation of innovative development of the agricultural sector in modern conditions.

1.6. Conceptual findings about the nature of strategic transformations of enterprises in the utility sphere: regional aspect

The change in the political and economic system in Ukraine, as in other post-Soviet countries, was based on a change in the paradigm of public administration, denationalization of management functions and privatization of public facilities. The public administration reform was carried out without a substantiated general concept, according to a simplified version of the ideas of the conceptual paradigm New Public Management (NPM), which was taken as the basis for the modernization of public administration by about 30 countries (Misiura, 2015). The prerequisites for the use of NPM in the development of public administration reforms in developed countries were:

– high budget expenditure of state functions;

– maintenance of the residual number of apparatus and bureaucratic procedures that hinder development;

– maturity and readiness of civil society institutions and the private sphere to perform certain state functions, while maintaining strategic functions for state bodies.

It should be noted the uncertainty and peculiarities of utility enterprises, which were described and investigated by the authors in the work (Dymchenko et al., 2023).

Utility enterprises, as objects of systemic complexity, have not been sufficiently studied either in theory or in solving practical problems. We are talking about a huge, dispersed throughout the country socio-economic facility, which is the main "service company" providing the basic needs of the population in utility. In our opinion, it is necessary to pay more attention to the study of the utility system of the city, region, country, taking into account modern challenges and the social significance of the services provided. The utility system is an object worthy of the adjective "specific". At the same time, it has a special character – social, economic, organizational, etc.

The components of the characteristics of the utility system, as a subject of research, reflect various contradictions of its functioning: it is simultaneously an object of spatial economy (regional structure and scale) and industry specifics (multifunctional complex - housing, transport, water supply, etc.), which provides services to the population and enterprises. Some components of the life-supporting (utility) complex are included in the classifiers of the industrial sector (water, energy); others – to the classifiers of the service sector (landscaping, consumer services); still others, such as transport and gas supply, are difficult to unambiguously attribute to any category.

Part of the structure of utility production has a clear monopoly position, and some allow the transition to market (competitive) relations in general. The paradox is that utility enterprises actually work according to the laws of business structures, but most of them are guided by the principles of non-commercial activity (urban centralized water supply is unlikely to have commercial freedom and market tariffs). Contradictions also arise through state support, since ideally it is desirable to create an effective mechanism for self-development, while in practice there are really no real conditions. The monopolistic nature of urban utility enterprises creates obstacles to the implementation of the denationalization strategy, which also contributes to some contradictions of a legal and organizational nature. This is not an incomplete list of contradictions that can already serve as the basis for certain conclusions. First of all, the sphere of utility, as an object of urban infrastructure, was formed not as an integral system, but as a conglomerate of regional character and purpose or a corporate administrative association.

In the near future, in order to achieve advantages, synergies and interaction of integration, this conglomerate of sectors should be fully organizationally restored or transferred to the variant of network or cluster models. In addition, utility enterprises operate on special technologies inherent in each industry (water supply - physical and chemical processes; energy and heat supply – heat generation, heat transfer, transportation technologies; residential sector – repair, construction, plumbing works (technologies), etc. The difference in technology leads to objective isolation of production processes, creates independent structures of service, control and accounting, causes differences in economic mechanisms, especially regarding the impact on the cost structure, the volume of losses , the need for investment. In addition, most enterprises operate in accordance with the credit mechanism of payment for services, that is, funds for services arrive some time after their provision, which cannot but affect the features of functioning.

Thus, these contradictions and generalized conclusions suggest that utility enterprises for their development, as an integral urban system, lack innovations of various levels and nature. The nature of the spatial network of the object requires the introduction of GIS technologies and logistics, the organizational conglomerate requires a corporate-cluster approach, market entry and denationalization – the development of marketing research. The need for investment – focuses on the introduction of new financial instruments. To maintain the lives of residents at a quality level, urban economic systems work. These systems are a large, diversified and extensive infrastructure of institutions and enterprises. Local infrastructure differs in the level of economic development of the country and, in turn, directly affects the development of entrepreneurship, quality of life and development of the country as a whole.

Assessing the consequences of distortions and imbalance of public administration for the industry and sectoral enterprises, the following should be noted:

– the set of centers for managing the activities of the industry, where forecasting, planning, definition and distribution of budget financing, control and coordination of internal and intersectoral relations took place, was deprived of their importance, unsuccessfully rebuilt or partially eliminated. The reduction of the state apparatus (structural units and number of personnel) probably reduced the cost of its maintenance (but rather not), but a number of significant functions were not redistributed, but lost. The professional continuity of managerial and professional skills is

violated, the formation of sectoral intelligence and the possibility of its development are interrupted. Information and analytical functions of data collection and processing, accumulation of managerial methodological and practical experience, development of guiding, instructional and regulatory materials, methodological recommendations have been lost. Lost sectoral institutes for research and development (R&D), development and implementation of automatic control systems - automated control systems, design and provision of engineering and technical, innovative development, adapted to local and industry conditions;

– privatization of state-owned enterprises (which in developed countries allowed to reduce the burden of the budget by attracting business to perform socio-economic tasks) should mean a change in the contractor and the source of its financing for society and did not provide for the introduction of new additional budget payments for traditional or artificially allocated social services (which has become a common practice for Ukraine) (Mokienko, 2021; Novytskyi, 2021);

– a large number of privatized enterprises did not ensure the transfer of responsibility for the preservation and further maintenance of the social sphere, which was previously their maintenance. As a result, utilities received additional worn-out fixed assets, mostly without fulfilling technical specifications regarding their operational qualities, but without state care for their condition;

– creation of financial and industrial groups during privatization took significant financial flows out of state control and reduced budget revenues, reducing state revenues and revenues of regional budgets;

– the deformation of the export-import policy led to the suspension and loss of unique enterprises and entire sectors of the economy, left opportunities for the development of its own industry, in particular the development of small business (deprived of the possibility of creating jobs and became an obstacle to solving the problem of employment and socio-economic development of society).

In the aspect of the above, it is advisable to consider conceptual approaches to the transformation of enterprises in the sphere of utility of the city.

Synthetic concept of enterprise reform. The concept of utility enterprises (UE) reforming is built as a result of research on the nomenclature of goals facing the enterprise, problems and tasks, the solution of which is necessary and is a key condition for achieving these goals, a set of measures used in the course of work on problems and tasks.

Such goals, problems, objectives, methods and measures, in particular, aimed at transforming the nature of enterprises, forms and structure of enterprises themselves and their organizational units, etc., constitute a single conceptual environment for the enterprise. The direction of his research comes from socially significant and relevant goals (strategic goals and missions) through:

– motivation for the destruction of inadequate organizational and managerial structures (reforming virtual corporations);

– formation of a vision of various kinds of stagnation, including economic insolvency (overcoming strategic drift);

– characterization of the most important, fundamental, key problems;

– comprehensive diagnostics of enterprises, which gives an idea of the nature of problems, their features and possible, acceptable ways to solve them for the enterprise;

– determination of the nomenclature and nature of measures for reengineering, restructuring and reorganization, ideas about their essence and features.

The principles of the further existence of UE are associated with the need for the speedy adaptation of its internal organization to the market environment and the characteristics of the existing market.

The way to create an organizational structure of an enterprise that can flexibly respond to changing market conditions is to build legal and management mechanisms to ensure the selection and implementation of appropriate and rational production and commercial strategies.

The construction of a mechanism capable of generating effective actions (strategies) of the enterprise (UE) is associated with the creation of integrations of two levels:

– The first level of integration is the formation of an interested owner (effective owner) capable of providing the enterprise with the necessary conditions for its development and maximum operational freedom, including commercial;

– The second level of integration involves the expedient decentralization and subsequent (simultaneous) corporatization of the enterprise, the separation of the main, the separation, creation and accession of non-core enterprises, the development of the nature of the enterprise and equipping it with its powerful own strategic center.

The essence of the concept of reform (Kravchenko, 2019) is to realize the potential of the existing market and develop new markets, fulfill

its social and corporate role, harmonize the internal organization of the enterprise and the external environment of these integrations, the meaning of which is the maximum use of the market.

The concept of reforming UE is a product of the synthesis of individual conceptual ideas about various aspects of the life of the enterprise, in particular the following:

– forms and mechanisms of internal self-organization;

– forms and mechanisms of interaction and communication with the external environment.

The main components of these conceptual concepts are:

1. Externally oriented strategic concepts of reorganization and restructuring, in particular:

– concept of mission, goals and objectives of the enterprise;

– the concept of the legal form (ownership) of the enterprise;

– concept of organizational and technical strategy;

– the concept of organizational and managerial (or production and economic) form of the enterprise.

2. Internally oriented operational restructuring concepts, including concepts:

– organizational structure of the enterprise (management and production);

– internal corporate mechanism for planning and controlling and using material and financial resources;

– business process engineering;

– Investing;

– corporate information and culture.

During this period, there is a gradual transformation of the public sector enterprise into the association (integration) of enterprises with different legal forms of private, collective, collective with a state share of participation, maximally adapted to the market environment in their strategic zones of management (SZM).

Under the strategic objectives of the transition period, which are indicated in the diagram (fig. 1.19) numbers 1, 2, 3, mean:

1. Formation of ideas about ways to eliminate insolvent production and economic structures and mechanisms for managing them, normalization of the production environment, the nature of an adequate reform program.

2. Creation of an integrated enterprise (integration), uniting individual enterprises of various legal, production and economic forms capable of providing:

- flexible restructuring of activities depending on changes in market conditions and socio-political requirements;
- the maximum number of sales of products and services (water supply and sanitation, their derivatives and non-core);
- maximum corporate (cumulative) profit;
- effective strategy of organizational and technical development, including as a result:

diversification of commercial offers in their SZMs;

- full use of market potential in their market segments;
- development of new market segments.

3. Normalization of production, creation of technological (production structures) of water supply, sewerage systems and non-core enterprises capable of ensuring the production of products and services of optimal cost, necessary focused on the developed market quality and quantity, with the lowest possible environmental and anthropogenic load.

Figure 2 shows an example of an algorithm of actions in the formation of a synthetic concept, content planning and development of an organizational project for reforming UE. The following section presents the characteristics of key concepts from the composition and algorithm of the synthetic concept of reform.

Reorganization concept. The main purpose of the reorganization is to redistribute the property rights of participants, change the structure and scope of their claims to the right to dispose of the property complex and the business that strategically took place (its commercial mechanism) or changes (distributes) the type of activity (business strategy).

The reorganization is carried out at the initiative of interested parties or by decision of the state or local authorities of the owner (Hailo, 2023).

The target set of results of the tasks solved during the reorganization is as follows:

1) state protection of participants' rights;

2) ensuring free redistribution of participation rights in the capital of the enterprise and transfer of such rights to persons who are interested in the long-term development of the enterprise (effective owners);

3) increasing the interest of participants in achieving the highest commercial results of the enterprise, in particular in the amount of profit;

4) separation of responsibilities of participants, managers and personnel of the enterprise;

5) development of the internal corporate governance mechanism;

6) ensuring investment attractiveness by creating clear legal and property guarantees for investors;

7) use by the enterprise of market mechanisms for raising funds, participation in commercial programs, projects;

8) creation of prerequisites for effective enterprise management and full adequacy of market environment.

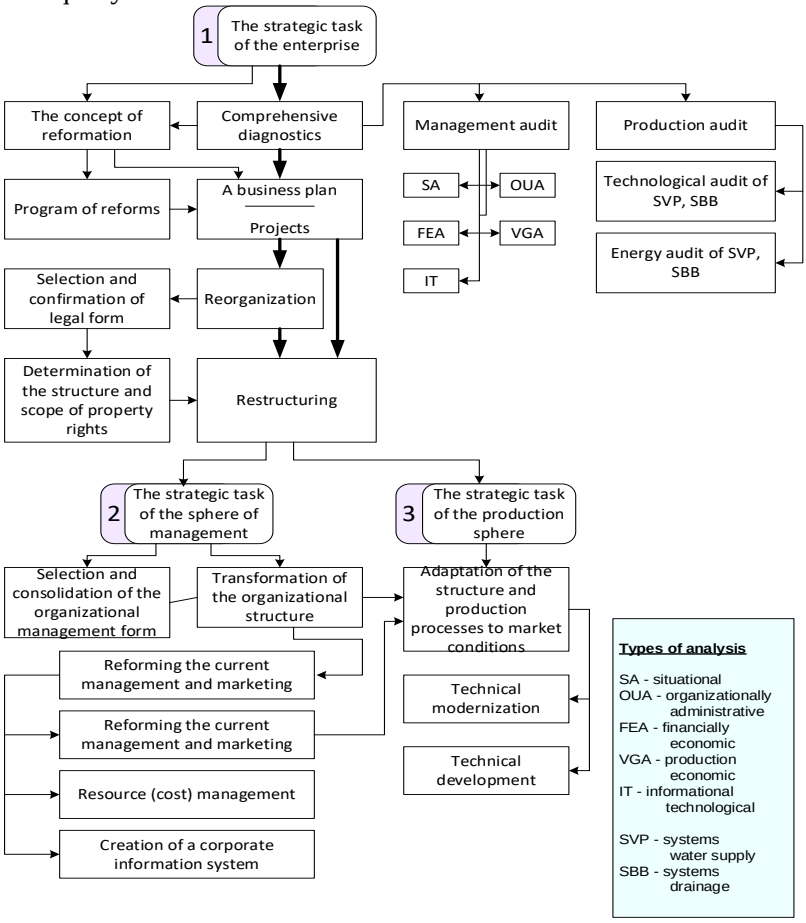

Figure. 1.19 – Nature and sequence of measures during the reform of utility enterprises

As methods of reorganization of enterprises are known and used: merger, accession, division, separation, transformation.

At the moment, the ownership of water utilities of Ukraine by right of ownership is divided as follows: property of territorial communities (communal); state ownership; collective ownership of a company of persons with limited property; joint-stock companies (collective ownership).

However, being in communal ownership, UE continue to remain in dual subordination.

Since the organizational, technical and economic strategy of the enterprise continues to be determined by state institutions and local communities, in the future the issues of reorganization of UE can be considered as a process of transformation of communal property or state representation.

The established order of things, the double standard of external management is not able to ensure the harmonious development of UE, the adequacy of the management system and production of the enterprise and the results of its activities to the requirements of the market environment for the following reasons:

– different nature of motivation of organizational and managerial decisions made by subjects of external management (priority of political interests over objective interests of the enterprise);

– inability and disinterest of external management to adequately participate in relevant investments to solve operational and future tasks of the enterprise;

– forms and nature of relations with institutions of state representation, local communities that determine ownership and carry out organizational, economic and technical strategies of the enterprise (the right to establish standards, norms and tariffs, use and dispose of property), which excludes the possibility of market management of the enterprise, which would be based on commercial interest.

As for today's realities, they are such that the enterprise again receives the role of a functional block in the deformed structure of former Soviet, and now Ukrainian, politicized methods of managing a market economy.

Strategic management, being the prerogative of external management, remains uncoordinated (two levels of external management) and inaccessible to the enterprise (divorced from it). The market mechanism of enterprise management in such conditions remains

undeveloped, and the market potential remains unrealized, that is, the enterprise, as before, is doomed to economic insolvency and subsidized form of existence, more precisely, remains in a position of authorized bankruptcy**.**

The conclusion that can be reached from the analysis of the existing order of external management of the enterprise, the nature of organizational and economic problems is as follows.

To create a normal organizational environment that provides the full range of production and management resources, property rights and freedom of operational and strategic decisions in one enterprise, reorganization is necessary, which will result in the selection and registration of an adequate legal form of ownership and management of the enterprise.

Ensuring an adequate legal form of the enterprise is achieved by integrating the defendants in external management, owners of the property complex and investors interested in the profitable operation of the enterprise in the long term.

Thus, the result of this integration, its content is the formation of the so-called effective owner.

Restructuring concept. The second level of enterprise integration is the choice of an adequate organizational and managerial form of the enterprise, which combines expedient solutions for the restructuring of the main production, non-core enterprises, including diversified, joining and newly created. Such an association, carried out on the principles of cooperation and concentration, in conjunction with the problem of an effective owner being solved (the first level of integration) creates a powerful prerequisite for the implementation of the mission of the enterprise and the strategic goals formulated earlier.

If the main issue of reorganization, during which the integration of owners and the formation of an effective owner is carried out, is the question of the subject of ownership, or, otherwise, who will own and manage (whom the owner entrusts to manage), then the main issue of restructuring is the issue of the object of management, or, otherwise, what and how the owner will own and manage (Kyzym, 2023).

It is absolutely clear that the object of management will be a set of enterprises, the nomenclature of which, the nature of their activities, their target tasks constitute the content of the organizational and economic strategy of integration.

Obviously, the integration created on the basis of the water supply and sewerage enterprises (WSSE) should include strategic business units that carry out the main production, a corporate center and support auxiliary enterprises, diversified enterprises in the manufacturing and commercial spheres.

Enterprises of this series are, to a certain extent, a conglomerate of objects of production, services, commerce, which may have different legal forms, operational-tactical and strategic features of the realization of their interests.

However, it is the consolidation of enterprises of diversified activities around the main production of WSSE, production capacities, engineering, technical and organizational and managerial resources and, finally, ensuring the socio-economic tasks of the region solved by the WSSE, that creates the prerequisites for their structuring, cooperation, subordination to management and coordination mechanisms formed during the restructuring.

Thus, answering the already posed question, what and how to manage, we define the dilemma of restructuring: 1) creation of an integrated enterprise structured around a common center; 2) creation of an internal integration mechanism for management and coordination by members of the association.

1.7. Cooperation of Ukraine with European transformation-oriented banks in the context of Ukraine's integration into the European Union

Long, inconsistent transformational processes in Ukraine require external organizational and financial support for the successful completion of market transformations. European transformation-oriented banks – the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB) – played a significant role in the financial provision of Ukrainian reforms over the past 5 years, the development of cooperation with which is a rather urgent problem for the theory and practice of modern European studies.

The problems and advantages of Ukraine's cooperation with the EBRD and the EIB, the peculiarities of the activities of these European transformation-oriented banks as providers of financial resources were

investigated in their works by such domestic and foreign scientists (Bilorus, 2007; Kovbasyuk, 2002; Kolosova, 2014).

Today, for Ukraine, this issue is gaining relevance due to the lack of internal financial resources and sometimes political will to complete the market transformation of the national economy and needs further detailed study.

Currently, the EBRD provides financial assistance to the states of Central and Eastern Europe for the purpose of carrying out structural economic and political reforms, implementing projects aimed at the general development and modernization of the economy. The main financial instruments of the EBRD include providing medium and long-term lending and carrying out investment activities (Tsygankova, 2001).

The main goal of the bank is to help countries in rebuilding their own economies into an open market state, where competition and market relations will prevail, as well as to support the private sector and its various initiatives. For this purpose, the EBRD provides loans to private and state enterprises for the creation of new production facilities and modernization of existing ones, increasing competitiveness, and provides free technical assistance in the framework of the preparation and implementation of various prospective projects.

The EBRD also provides equity financing by providing investment support. The Bank can consider any projects it receives. The decision to grant a loan is made by the EBRD Board of Directors after reviewing the submitted materials and checking them for compliance with international standards (Hrytsiak, 2009).

However, it is worth noting that the basic position of the bank, stipulated in the charter, is the impossibility of financing projects related to such spheres of activity as the defense industry, the tobacco industry, the production of means prohibited according to the norms of international law, the gaming business, production activities that have negative impact on the environment.

The EBRD is a kind of synthesis of an ordinary commercial banking institution and a development bank, since its tasks include not only the provision of funds for the implementation of projects aimed at the development of the economy, but also at the same time carrying out its activities exclusively on a commercial basis and subject to compliance with the general recognized insurance and banking standards, in accordance with Chapter III of the Agreement on the establishment of the European Bank for Reconstruction and Development (EBRD).

The base lending rate of the EBRD is LIBOR (London Interbank Offered Rate). Above the credit rate, a certain margin percentage is set for the bank. If the loans are granted under the conditions of guarantees of the government of the borrowing country, the bank's margin is 1%.

This offer is very beneficial for the borrower countries, because in the process of paying the loan additional attention is paid to such factors as political risks, commercial risks, market structure, etc. Currently, 66 countries of the world, the European Union and the European Investment Bank are shareholders of the EBRD. The bank's clients are 38 post-Soviet countries and some Asian states (European Investment Bank – EIB).

A developed and successfully functioning private sector is considered the foundation of a stable and powerful economy. This position is also shared by the EBRD. This is expressed in the fact that assistance to the private sector of the economy is enshrined in the EBRD Charter. In this document, it is assumed that 60% of all the bank's resources should be directed to the financing of private sector projects, the remaining 40% is intended for the public sector.

In addition, thanks to its own high credit rating of AAA, the EBRD has the opportunity to attract funds from international capital markets on the most favorable terms. There are also special funds that are formed at the expense of profits received from credit and investment activities and contributions from other states. Funds from these funds are usually directed to provide free technical assistance and provide loans and investments to industries that have low profitability.

A characteristic feature of the EBRD is that, unlike such an international financial organization as the World Bank, it provides financing in the amount of up to 35% of the total cost if a new enterprise is being created or up to 35% in the case of long-term capitalization of an existing firm at the moment of time and successfully carries out its activities.

At the same time, the EBRD can assist in finding other partners who would be able to finance the remaining costs. That is, the principle of co-financing is the basis of the bank's activity. But it is worth noting that, if necessary, the EBRD can increase its own share to 49%.

Instead, the European Investment Bank is an autonomous non-profit institution of the European Union that provides loans, guarantees and technical assistance for business projects that are expected to contribute to the achievement of EU policy objectives. Although 90% of EIB loans are concentrated within the EU, 10% of lending is provided to foreign markets.

The purpose of the creation of the bank was to finance investment projects that would contribute to stimulating the balanced development of the Union, as well as perform an auxiliary function in the field of providing financial assistance to third countries.

The European Investment Bank operates in three types of services: providing loans, technical assistance by a team of experts and specialists, as well as providing guarantees of banks, funds, leasing companies, etc.

To receive a loan from the EIB within the EU, the project must meet at least one of the following criteria:

- development of the economic situation in regions with unfavorable conditions;
- reliable energy supply;
- optimization of trans-European energy and transport connections;
- increasing the level of competitiveness of the industrial sector in the international arena, as well as the development of its European integration aimed at supporting small and medium-sized businesses;
- modernization and expansion of infrastructure in the field of education and health care, promotion of urban regeneration in accordance with the "Amsterdam Special Action Program" aimed at supporting population growth and employment;
- environmental protection and improvement of the quality of life, protection of architectural heritage and development of cities.

The authorized capital of the EIB is formed from the contributions of the EU member states. The EIB forms its resources based on the issuance and placement of bonds on the national and international money market. The bank raises the vast majority of its assets on the capital markets, where it has a credit rating of AAA, which allows it to borrow funds on the best terms.

Since the organization is non-commercial, these conditions are projected at low percentages of loans granted. Lending is provided in several currencies and at an interest rate that varies depending on specific aspects. These include borrowed currencies, the amount, duration and terms of payments.

This institution finances up to 35% of a project that has not yet started, and the maximum funding is 50% of the project amount. This means that the rest of the funds must be contributed by other participants.

The EIB provides loans lasting approximately four to twenty years, depending on the economic life of the assets to be financed. Thus, loans are divided into medium-term (up to 12 years) and long-term (over 12 years).

Medium-term loans are usually aimed at supporting small and medium-sized businesses. Depending on the credit risk profile and related to the economic life of the project (assets), financing for a period of up to 3 years (short-term lending) is also allowed in each individual case.

Targeted loans are also distinguished among the above classifications. Their goal is to support profitable and sustainable projects worth more than 25 million euros, and their goal should be in line with the EU's objectives. As with conventional loans, financing is assumed to be 50%.

Just like the EBRD, the EIB has its own list of prohibited projects for financing. Thus, it does not finance projects related to the production of weapons, projects that violate or limit human rights and freedoms, environmental and social conditions, projects whose implementation is prohibited by law [10].

In the conditions of aggravation of internal problems, such as a protracted economic crisis, political instability, military conflict in the east of the state, as well as against the background of intensifying geopolitical competitions in the world, Ukraine faces the need to complete deep systemic transformations in order to solve internal problems and ensure further development and prosperity.

Traditionally, serious transformational processes in Ukraine always go hand in hand with protracted economic problems, acute questions arise regarding the resource provision of these transformations and further economic development. The formation of a powerful market economy, the formation of the latest infrastructure, the construction of institutions of a modern society, all this requires the modernization of our state, which, in turn, is not possible without the availability of a significant amount of financial resources.

For Ukraine, financial support from global transformation-oriented institutions such as the International Monetary Fund, the World Bank, and similar European banks is the source of funding for such systemic transformations, under conditions of limited own resources.

The low cost of financial resources, relative to other sources, the importance of their evaluations and cooperation for the remaining smaller potential investors and creditors are among the most compelling arguments that encourage Ukraine to cooperate with these global and European transformation-oriented banks.

Ukraine, in the process of implementing internal reforms, needs a powerful financial source and technical assistance from international

organizations, the effective implementation of these tools to solve social and economic problems. Long-term financing from such European transformation-oriented banks as the EBRD and the EIB is a stable and reliable resource for the development of priority projects, so the use of these funds should be based on equal partnership, cooperation and mutual understanding.

The conducted research showed that among the financing sectors, both the EBRD and the EIB willingly provided funds for the development and improvement of transport infrastructure, the development of financial institutions, and the improvement of the conditions of agriculture in 2017.

The European Bank for Reconstruction and Development has also made a significant contribution to the development of the energy sector, while the European Investment Bank is just beginning to finance this sector. In particular, the priority areas of activity for both European transformation-oriented banks can be noted a significant increase in the level of energy efficiency and reduction of energy consumption due to the improvement of the capacities of domestic power plants, modernization of gas pipelines, introduction of technologies for the production of alternative energy, modernization of heating networks, etc.

Despite the wide range of projects that are already at the stage of implementation and implementation, quantitative indicators show that in recent years there has been a reduction in the volume of EBRD and EIB financing.

In recent years, EIB lending decreased to 38% compared to the previous year and amounted to 318.1 million euros, while EBRD lending increased by 27% and reached 740 million euros.

The peak period was 2014-2015, which is explained by the support of Ukraine against the background of a difficult geopolitical and economic situation. In particular, 1,210 million euros were allocated by the European Bank for Reconstruction and Development in 2014 and 1,258 million euros from the European Investment Bank in 2015. According to analysts' forecasts, the growth dynamics of lending from these financial institutions should increase, at least in the short term.

It must be said that comparing the financing of these two European transformation-oriented banks, it is fair to say that the share of funds from the EBRD prevails over the share from the EIB. First of all, it is related to the time interval of cooperation between Ukraine and organizations.

Our state's membership in the EBRD was obtained in 1992, and the signing of the EIB cooperation agreement with Ukraine took place only in

2005. There are also a number of other issues that prevent and slow down the establishment of fruitful cooperation with these financial organizations.

Ukraine needs to deepen structural reforms in many areas, including regulation of the financial and energy sectors, management of public finances and budget and tax policy, and improvement of the business climate in the country.

Risks associated with frequent changes and inconsistencies in policy need to be mitigated by conducting preliminary diagnostic studies of governance effectiveness and activities to build broad consensus on an agreed “road map” of change in each sector separately to ensure greater flexibility in actions when curtailing activities due to change politicians

In order to ensure long-term cooperation between Ukraine and European transformation-oriented banks, it is necessary to form a broader strategy for their interaction. Schematically, such a strategy can be presented in the following form.

Within the substantive limits of our work, we are talking only about a fragment of the outlined strategy, which concerns the interaction of Ukraine with transformation-oriented banks of the European level, capable of financially supporting systemic transformations in Ukraine, aimed at completing the formation of a market-type economy and transforming the economy in the direction of a post-industrial society. Traditionally, the strategy contains the goal of the activity, the means of realizing the specified goal, the subjects participating in its formation and implementation, as well as the accompanying conditions of strategic cooperation.

A separate block of the strategy consists of unresolved issues on the way to the development of further cooperation between the parties. The experience of the EBRD clearly indicates to us that currently an obstacle to further improvement of cooperation with this European transformation-oriented bank is the unresolved by our state of a number of problems such as: the problem of corruption at all levels, first of all in the activities of the tax and customs services, increasing the efficiency of the judicial system . Real steps taken by the government of Ukraine in solving the above-mentioned problems will affect the future cooperation of our state with the EBRD and the volume of credit and investment assistance.

From a strategic point of view, the following measures should be implemented to revitalize and intensify further cooperation of Ukraine with the EBRD:

- to fulfill the commitments to introduce structural reforms and modernize the economy;

- implement legislative provisions that will enable the EBRD to issue bonds in the national currency, i.e. the hryvnia. Despite the risks to which large Ukrainian banks and the Ministry of Finance of Ukraine are exposed, which in the future will allow credit resources to become cheaper, which in turn will contribute to more active growth of the state's economy;

- promotion of investment in production, service sector, financial sector and infrastructure;

- stimulating the implementation of economically justified projects, providing technical assistance for their implementation.

One of the key conditions for further obtaining credit resources from this European transformation-oriented bank can also be called the presence of political stability and adherence to a clear direction of reforms and a course towards European integration.

The management structure of the EIB obliges the organization to promote the development of social justice, first of all among the EU countries, and also provides them with the opportunity to improve the methods of environmental protection. Since Ukraine is not a member of the European Union, the application of the provisions of the statute in its full extent is currently impossible. Therefore, in order to improve the strategic positions of Ukraine when receiving funds from the EIB, it is necessary to:

- ensure a sufficient level of awareness of private organizations, especially financial and credit organizations, regarding the terms of financing EIB projects;

- to create all the necessary conditions to ensure transparency and openness during the implementation of projects, which would contribute to the improvement of the partnership;

- to jointly develop an agreed and coordinated strategy of Ukraine's activities and cooperation with the European Investment Bank, which would include operational goals;

- increase the bank's investment portfolio for Ukraine;

- increase the level of participation of local communities in the process of making investment and credit decisions.

Another strategic prerequisite for deepening cooperation is to raise the level of project management in the Ministry of Economic Development of Ukraine as a structure designed to coordinate and control the effective implementation of programs and projects. This is explained by the fact that the potential of this organization makes it possible to analyze in detail and

decide which sectors of the economy and which segments of the industry need priority financing.

The conducted analysis shows that the EBRD is an important partner for Ukraine, as it finances a large number of projects, which in general contributes to the establishment of market institutions, the strengthening of economic potential, and the improvement of the country's balance of payments. In the future, it will depend on the results of cooperation with European transformation-oriented banks and the European Bank for Reconstruction and Development, among other things, whether large private foreign investors will trust Ukraine with their resources. After all, the very fact that the EBRD invests billions of euros in Ukraine can be a positive signal for other investors who, reacting to the presence of such a large financial player as the EBRD, will be motivated to invest more actively in Ukraine.

It is also necessary to carry out a careful analysis of the reasons for the refusal of project financing by the Board of Directors of the EBRD and to further monitor that the submitted projects meet such criteria as perspective, potential usefulness for the development of the domestic economy, the possibility of a large contribution by its main sponsor to the authorized capital in monetary or in-kind form, compliance with banking and environmental standards, etc.

The problem of non-transparency of the monitoring system for the use of funds is quite acute. In order to solve it, internal mechanisms must be developed, which in the future would allow transparent monitoring of the entire project implementation procedure – from the provision of funds to completion.

There are reasons to say that the EIB's investments are absolutely necessary for our country, since the organization provides its funds at a low interest rate, which is lower than the interest rate of the EBRD. This factor is quite important for the difficult situation of the Ukrainian economy.

It is the business-oriented and flexible policy of the EIB that should contribute to structural and sectoral development, the formation of infrastructure, improvement of the business climate, laying the foundation for the activation of business activities, reducing the level of energy consumption by economic entities, increasing the welfare of the population and supporting small and medium-sized businesses.

This is explained by the focus of the European Investment Bank on improving the development of private initiatives, supporting the energy industry, in particular the active use of alternative energy sources, with the

aim of stimulating the transition to a market economy and private entrepreneurship.

Despite this, there are a number of obstacles that prevent the establishment of fruitful cooperation with institutions. In order to improve the cooperation between Ukraine and the EIB, it is necessary to increase the effectiveness of activities and the implementation of the funds provided by the Ukrainian government. After all, in order to attract the same significant amounts of funds, it is necessary to ensure the systematicity and quality of project implementation in working with the EIB.

Therefore, the main elements of the strategy of long-term cooperation of Ukraine with international transformation-oriented institutions, in particular, with the EBRD and the EIB, were formed.

In addition, a comparison was made of the scope and results of cooperation of these financial institutions with Ukraine over the past five years. The reasons that create obstacles to the further deepening of the cooperation of our state with these international financial institutions are analyzed and recommendations are given regarding further actions for the successful development of cooperation of Ukraine with these European transformation-oriented banks in the future.

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Chapter 2
ECONOMIC AND SOCIAL ASPECTS OF UKRAINE'S INTEGRATION INTO THE EU

2.1. Status and prospects of socially responsible business development as a component of Ukraine's integration into the European Union

Ensuring the stability of the functioning of the economic system in Ukraine in the post-war period, European integration processes necessitate the introduction of adaptive mechanisms of interaction between the state, business and society, aimed at strengthening the joint responsibility of all participants in reproductive processes, forming prerequisites for the socio-ecological and economic development of the state and society.

In 2017, Ukraine joined the OECD Declaration on International Investments and Multinational Enterprises, an integral part of which are guiding principles for conducting business, in particular (Accession, 2016): ensuring the protection of human rights, employment of the population, protection of the natural environment, protection of consumer interests, competition , tax transparency, etc. Like every state that has joined the OECD Declaration, Ukraine implements the policy of socially responsible business (hereinafter − SRB), has undertaken to create a National Contract Clause and implement international standards and principles of SRB (Concept, 2020).

In Ukraine, SRB is at the stage of development. In accordance with the Concept of State Policy Implementation in the Sphere of Promoting the Development of Socially Responsible Business in Ukraine for the Period Until 2030 (Concept, 2020), the SRB determines the responsible behavior of business entities for the impact of their decisions and actions on society and the surrounding natural environment, which contributes to sustainable development society. At the same time, it is noted that the development of SBS is a voluntary activity of subjects aimed, in particular, at minimizing the harmful impact on the natural environment, creating trust between business, society and the state.

In the war and post-war period, the target orientations of the CSB change, which transforms the interpretation of its essence. We offer the following author's definition of socially responsible business: the responsible behavior of business entities for the impact of their decisions on all participants

in the market reproduction process (consumers, employees, partners, various stakeholders, as well as the surrounding natural environment), which ensures the stability of the functioning and development of economic systems on macro-, meso- and micro-levels, national security, sustainable development of society and the state in conditions of challenges and threats.

Most scientists divide social responsibility into two groups (Fig. 2.1): 1) internal; 2) external. First of all, the policy on the development and management of labor resources at enterprises is included in the internal component of SRB. The composition of external social responsibility is debatable; in addition to various spheres of interaction with authorities and consumers, it includes environmental protection.

Figure 2.1 – Groups of socially responsible businesses in Ukraine*
*Compiled based on sources (Concept, 2020; Melnyk, 2008; Mostepanyuk, 2019).

The social component occupies an important place in the structure of SRB systems at the micro, meso, and macro levels, influencing the conditions of development of its economic and ecological components. The social component forms the internal responsibility of economic entities (see Fig. 1). According to Concept № 66-r dated January 24, 2020, the main directions of the development of social welfare in the field of population employment are the creation of new jobs, the development of social responsibility strategies of business entities taking into account the interests of citizens and society, the implementation of charitable activities to support socially vulnerable groups

population, in the field of development of labor relations − creation of safe working conditions, organization of medical insurance of employees, etc. (Concept, 2020).

We will analyze the state of the SRB in Ukraine in the pre-war and war periods. The dynamics of employment indicators in the sectors of the national economy are shown in Table 2.1.

Table 2.1 – Dynamics of the number of people employed in the sectors of the economy of Ukraine, thousands of people*

SECTORS	**2015**		**2018**	**2019**	**2020**	**2021**		**2021 % to 2015**
	thou-sands	**%**				**thou-sands**	**%**	
1. Agriculture, forestry and fisheries	2870.6	***17.5***	2937.6	3010.4	2721.2	2692.7	***17.2***	*93.8*
2. Industry	2573.9	***15.7***	2426	2461.5	2358.6	2313.2	***14.8***	*89.9*
3. Construction	642.1	***3.9***	665.3	699	664.4	690.8	***4.4***	***107.6***
4. Wholesale and retail trade; repair of motor vehicles and motorcycles	3510.7	***21.4***	3654.7	3801.3	3648.7	3604.7	***23.1***	*102.7*
5. Transport, warehousing, postal and courier activities	998	***6.1***	995.1	999	975.2	961	***6.2***	*96.3*
6. Temporary accommodation and catering	277.3	***1.7***	283	304	285.4	285.2	***1.8***	*102.8*
7. Information and telecommunications	272.9	***1.7***	280.3	289.2	283.7	289	***1.9***	***105.9***
8. Financial and insurance activities	243.6	***1.5***	214	211.6	212.5	210.6	***1.3***	*86.5*
9. Real estate transactions	268.3	***1.6***	259.4	259.7	251.2	248.2	***1.6***	*92.5*

SECTORS	2015		2018	2019	2020	2021		2021 % to 2015
	thou-sands	%				thou-sands	%	
10. Professional, scientific and technical activity	422.9	***2.6***	437.9	421.6	418.2	422.2	***2.7***	*99.8*
11. Activities in the field of administrative and auxiliary services	298.6	***1.8***	304.3	317.9	304.6	317.9	***2***	***106.5***
12. Public administration and defense; compulsory social insurance	974.5	***5.9***	939.3	870.5	901.9	873.9	***5.6***	*89.7*
13. Education	1496.5	***9.1***	1416.5	1388.7	1394.9	1244	***8***	*83.1*
14. Health care and provision of social assistance	1040.7	***6.3***	995.4	974.2	935.4	913.4	***5.9***	*87.8*
15. Arts, sports, entertainment and recreation	207.9	***1.3***	196.9	197.6	196	178.7	***1.1***	*86*
16. Other types of economic activity	344.7	***2.1***	355.2	372.1	363.4	364.5	***2.3***	*105.7*
Total:	**16443**	**100**	**16361**	**16578**	**15915**	**15610**	**100**	**94.9**

*Calculated according to the data of the State Statistics Service of Ukraine (Statistical Yearbook, 2022; Official website of the State Statistics Service of Ukraine, 2022).

In 2021, 15,61 million people were employed in the sectors of the national economy, which is 5.1% lower than in 2015. The largest number of people employed in the trade sector is 23.1% of the total, the agricultural sector is 17.2%, industry – 14.8%, education and transport (8% and 6.2%, respectively). In 2015-2021, a slight upward trend in the number of employed was observed in construction (by 7.6%), in the field of administrative services (by 6,5%), information and communications

(5.9%), trade (2.7%) and food organizations (2.8%). Other sectors are characterized by a tendency to decrease employment (see Table 2.1), while the highest rates are characteristic of the sphere of education (by 16.9%), health care (by 12.2%), and art and sports (by 14%).

During the studied period, there were no significant structural changes in employment in the sectoral dimension (Fig. 2.2). The most significant structural change was the reduction of the specific weight of education by 1.1 pp. and an increase in the share of the trade sector (by 1,7 percentage points) in the total number of employed workers.

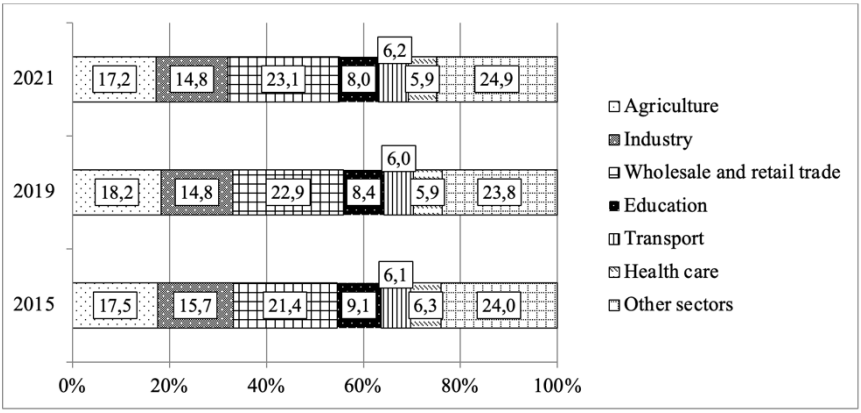

Figure 2.2 – Sectoral structure of the employed in the economy of Ukraine, % (Calculated according to the data of the State Statistics Service of Ukraine (Statistical Yearbook, 2022; Official website of the State Statistics Service of Ukraine, 2022)).

One of the indicators that determines the effectiveness of the implementation of task 8.5 «Contribute to the provision of reliable and safe working conditions for all workers, in particular through the use of innovative technologies in the field of labor protection and industrial safety» of Sustainable Development Goals (SDG), is the share of workers engaged in work with harmful conditions labor, in the total number of full-time employees. The target value of the indicator for 2025 is 17% (Sustainable Development Goals, 2017). The dynamics of the indicator in the sectoral dimension are shown in Table 2.2.

Table 2.2 – The dynamics of the share of employees employed in jobs with harmful working conditions in the total number of full-time employees of Ukraine, %*

SECTOR	2015	2017	2019	Deviation in 2019 from the TV 2025** (17%)	Dynamics changes (3-1)
All sectors of the economy, including:	**28.9**	**28.4**	**29.6**	**+12.6**	**+0.7**
1. Agriculture and the provision of related services	11.2	12.6	14.5	**-2.5**	+3.3
2. Industry, everything	35.3	34.1	34	+17	-1.3
3. Mining and quarrying	68.7	67.9	66.5	+49.5	-2.2
3.1. Extraction of stone and lignite from them	82	81.2	**78.6**	+61.6	-3.4
4. Processing industry, everything	29.2	27.8	28.5	+11.5	-0.7
4.1. Production of food products	17.3	19.5	20.5	+3.5	+3.2
4.2. Production of wood products	22.5	23.7	25.6	+8.6	+3.1
4.3. Production of coke and oil refining products	58.5	61.3	**59.5**	+42.5	+1
4.4. Production of chemicals and chemical products	37.2	33.4	37.3	+20.3	+0.1
4.5. Metallurgical production	57.7	56.3	**55.4**	+38.4	-2.3
4.6. Production of computers, electronic and optical products	14.7	14.4	13.2	**-3.8**	-1.5
4.7. Textile production	9.5	11.1	12.1	**-4.9**	+2.6
4.8. Production of electrical equipment	23.7	21	19.4	+2.4	-4.3
4.9. Production of motor vehicles	21.5	19.4	19.4	+2.4	-2.1
4.10. Production of furniture	30.3	29.1	33.9	+16.9	+3.6
5. Supply of electricity, gas, steam and air conditioning	35.2	34.9	34	+17	-1.2
6. Water supply	35.3	35.4	36.5	+19.5	+1.2
7. Construction	20.8	20.5	22.5	+5.5	+1.7
8. Transport, warehousing	23.1	23.5	27	+10	+3.9
9. Telecommunications (electronics)	11.4	10.7	11.1	**-5.9**	-0.3

*Calculated according to the data of the State Statistics Service of Ukraine (Sustainable Development Goals, 2021); statistical data are collected once every two years;

**TV – Target value of the indicator in 2025 (17%) (Sustainable Development Goals, 2017).

In 2019, the share of full-time employees employed in jobs with harmful working conditions in the economy of Ukraine as a whole

amounted to 29,6%, which is 12,6% higher than the target value of the indicator in 2025. The highest level of the indicator is characteristic of the extractive industry (66,5%), in particular, the sub-sector of stone and lignite mining (78,6%), which is more than four times higher than the target value of the indicator for 2025. This level is the highest among the sectors of the national economy, and at the same time, for 2015-2019, it is characteristic there is a slight downward trend of the indicator - by 2,2 and 3,4 percentage points. respectively (see Table 2).

The second and third places in the economy are occupied by the subsectors of production of coke and refined products and metallurgical production with a share of 59,5% and 55,4%, respectively, exceeding by 43% and 38% the target benchmark of 2025. In general, the share of employees employed in Ukrainian industry on jobs with harmful working conditions, in the reporting year it was 34%, exceeding the target indicator of 2025 by 17%. It should be noted that the indicator is quite high in the energy and water supply sectors (34% and 36,5%, respectively). In the listed sectors of the economy, it is expedient to implement innovative labor protection technologies, modern occupational health and safety management systems.

In the reporting year, four sectors of the national economy not only achieved, but also improved the target value of the indicator for 2025: (1) agriculture (14,5%); (2) computer production (13,2%); (3) textile production (12,1%); (4) telecommunications (11,1%). During the studied period, there were no significant changes in the dynamics of changes in the indicator, with the exception of its growth in agriculture (by 3,3%), furniture production (by 3,6%), transport and warehousing (by 3,9%) and reduction in the production of electrical equipment (see Table 2).

During the wartime, changes were made to labor legislation, in particular, to the Law of Ukraine «On the Organization of Labor Relations in the Conditions of Martial Law» dated March 15, 2022 № 2136 − IX (On the Organization, 2022). According to it, during the period of martial law, the employment of women (except pregnant women and women with children under one year of age) is allowed with their consent in hard work and in work with harmful or dangerous working conditions, as well as in underground work. Taking into account the existing trend in most sectors of the economy regarding the increase in the share of workers employed in jobs with harmful working conditions in the pre-war period (see Table 2.2), and the institutional changes of the war period (On the Organization, 2022), in the post-war period we should expect the preservation and deepening of

the existing trend .

The level of the average monthly nominal salary of full-time employees of the national economy in 2021 was UAH 14,014, which is 20,9% higher than in 2020 (table 2.3). In the sectoral dimension, the highest level of wages of employees was observed in the spheres of information and telecommunications (by 82,2% above the average level in the economy), financial and insurance activities (by 71,1%), professional and scientific and technical activities (by 38,2%).

In industry, the average monthly salary exceeded the average indicator for the economy by 6,3%, in agriculture it was lower by 12,3%. In 2021, the lowest level of nominal wages was inherent in the sectors of food organization (by 39% below the average indicator for the economy), administrative and support services (by 20,2%), real estate (by 20,5%), education (by 17,1%) and healthcare and art (by 10,7%). Despite the relatively low level of wages, these sectors of the economy had the highest growth rates (see Table 3).

In the structure of total resources of households, the share of cash income in 2021 was 93.9%, having increased compared to 2015 by 4,5% due to the reduction of other components, in particular, the value of products obtained from the subsidiary farm (by 2.1%), benefits and subsidies for the payment of housing and communal services (by 1,2 percentage points), non-cash benefits for the payment of health care goods and services (Fig. 2.3). In the war and post-war periods, the structure of the aggregate resources of households will change in the direction of reducing the specific weight of cash income and increasing the share of benefits and subsidies, as well as the value of products of personal subsidiary farms and self-production.

In the structure of monetary incomes of Ukrainian households, the dominant component is wages, the specific weight of which increased from 52.8% in 2015 to 63.7% in 2021 due to the reduction of other components (Table 2.4). Despite the downward dynamics, the share of pensions, scholarships and social assistance remains quite high – 21.1% in 2021. The specific weight of income from the sale of agricultural products is 2.7%, other cash income – 6.5% and has for 2015-2021 downward trend.

During the war period, the relocation and forced migration of the population led to a change in the structure of the labor market and the structure of supply in the regional dimension, which certainly affected the social indicators of responsible business in Ukraine. According to the

NBU's monthly macroeconomic and monetary review for July 2022, small and medium-sized businesses lost 1,07 million employees.

Table 2.3 – Dynamics of the average monthly nominal salary of full-time employees in the economic sectors of Ukraine, hryvnias*

SECTORS	2015		2018	2019	2020	2021		2021 in % to 2021
	UAH	% to ML**				UAH	% to ML**	
1	2	3	4	5	6	7	8	9
1. Agriculture, forestry and fisheries	3309	***78.9***	7557	8856	9757	12287	***87.7***	*125.9*
2. Industry	4789	***114.2***	9633	11788	12759	14902	***106.3***	*116.8*
3. Construction	3551	***84.6***	7845	9356	9832	11289	***80.6***	*114.8*
4. Wholesale and retail trade; repair of motor vehicles and motorcycles	4692	***111.8***	9404	10795	11286	13488	***96.2***	*119.5*
5. Transport, warehousing, postal and courier activities	4653	***110.9***	9860	11704	11951	13837	***98.7***	*115,8*
6. Temporary accommodation and catering	2786	***66.4***	5875	6730	6026	8543	***61***	*141.8*
7. Information and telecommunications	7111	***169.5***	14276	17543	19888	25530	***182.2***	*128.4*
8. Financial and insurance activities	8603	***205.1***	16161	19132	20379	23975	***171.1***	*117.6*
9. Real estate transactions	3659	***87.2***	7329	8626	8981	11142	***79.5***	*124.1*

Continued table 2.3

1	2	3	4	5	6	7	8	9
10. Professional, scientific and technical activity	6736	***160.6***	12144	14550	16613	19369	***138.2***	*116.6*
11. Activities in the field of administrative and auxiliary services	3114	***74.2***	7228	8700	9878	11186	***79.8***	*113,2*
12. Public administration and defense; compulsory social insurance	4381	***104.4***	12698	14785	16443	19048	***135.9***	*115,8*
13. Education	3132	***74.7***	7041	8135	9271	11817	***82.9***	*127.5*
14. Health care	2829	***67.4***	5853	7020	8848	11616	***89.3***	*131.3*
15. Arts, sports, entertainment and recreation	4134	***98.5***	7612	8659	9624	12508	***89.3***	*130,0*
16. Other types of economic activity	3634	***86.6***	8132	9096	11998	13279	***94.8***	*110.7*
Total:	**4195**	**100**	**8865**	**10497**	**11591**	**14014**	**100**	***120.9***

*Calculated according to the data of the State Statistics Service of Ukraine (Statistical Yearbook, 2022; Official website of the State Statistics Service of Ukraine, 2022);
**ML – Middle level of wages in the economy

Since the beginning of the war, the following changes have taken place in the labor market (Official website of the National Bank of Ukraine, 2022): (1) 27% of the personnel work under reduced wages; (2) 20% of the staff were sent on forced leave; (3) about 20% of employees were laid off. The tendency to decrease the number of people employed in the sectors of the national economy is combined with a decrease in the incomes of the population. The share of the population with incomes below the actual

subsistence minimum (2,481 UAH) may reach 70% in 2022 compared to 18% in 2021 (Pyshchulina, Markevych, 2022).

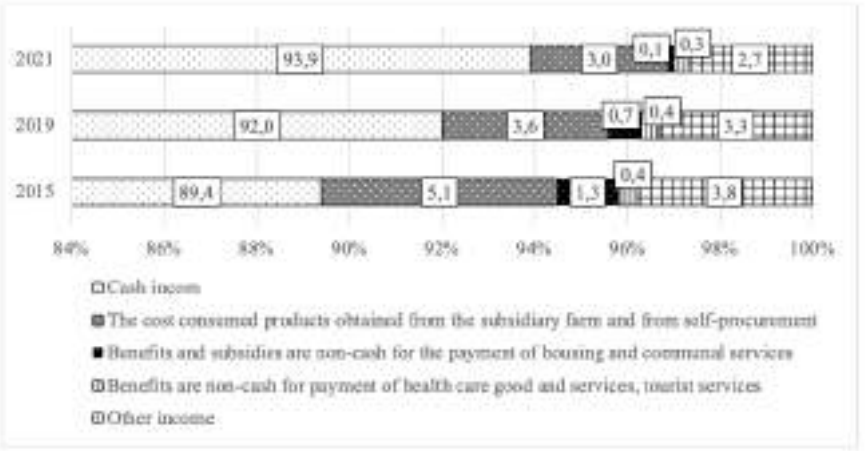

Figure 2.3 – Structure of aggregate resources of Ukrainian households, % (Compiled according to the data of the State Statistics Service of Ukraine (Official website of the State Statistics Service of Ukraine, 2022)

During the war, the level of wages in most sectors of the economy is reduced. According to the State Employment Service, the average wage at the beginning of the war was UAH 9,371, and on June 1 – UAH 9,057 (Official website of the State Employment Service, 2022). The deterioration of the financial condition of business entities has caused a tendency to reduce costs for labor and staff maintenance. As a result, changes in the structure of monetary incomes of Ukrainian households are expected in the direction of a decrease in the specific weight of wages and an increase in the share of social assistance and other monetary incomes (see Table 2.4).

As of June 1, 2022, an average of 12 unemployed people applied for one job vacancy in Ukraine (as of June 1, 2001 – 5 people, in 2000 – 9 people). By the end of 2021, 10,3% of the working population aged 15 to 70 (1,7 million people) were officially unemployed. At the same time, according to surveys, as a result of hostilities, an average of 53% of the able-bodied population in the country remained unemployed (74% in the East) (Pyshchulina & Markevych, 2022).

Table 2.4 – The structure of monetary incomes of Ukrainian households, %*

Constituents	Years							Changes (+, -)
	2015	2016	2017	2018	2019	2020	2021	
1. Payment of work	52.8	54.3	59.9	60.6	62.3	62.1	63.7	+10.9
2. Income from entrepreneurial activity and selfemployment	6.2	6	5	6.7	7.1	6.2	6.1	-0.1
3, Income from the sale of agricultural products	3.8	3.4	3.4	2.8	2.6	2.3	2.7	-1.1
4. Pensions, scholarships, social benefits provided in cash	28.2	26.9	23.1	22.1	20.9	22.2	21.1	-7.1
5. Monetary assistance from relatives, other persons and other monetary income	9.1	9.4	8.6	7.8	7.2	7.2	6.5	-2.6
For reference: monetary income, UAH	*4579*	*5242*	*7012*	*8739*	*10911*	*11501*	*13379*	*8799.7*

*Calculated by the author based on the data of the State Statistics Service of Ukraine (Official website of the State Statistics Service of Ukraine, 2022).

In 2021, the employment rate of the population aged 20-64, which is one of the indicators of the fulfillment of task 8.3. SDG 8 «Decent work and economic growth» amounted to 65,3%, not reaching the target value of the indicator in 2025 (68%). The dynamics of the indicator, disaggregated by the type of place of residence, shows its higher level in urban areas (by 1,1−1,3% above the average value) and a lower level in rural areas (Fig. 2.4).

Given the existing trends of population migration and structural changes in the labor market, in 2022, a decrease in the level of population employment is expected in most sectors of the economy, except for the IT sector, wholesale and retail trade, in which there is a slight increase in

wages. In 2020, the labor productivity of one employed person in the economy of Ukraine amounted to 157,7 thousand hryvnias, having increased compared to 2015 by 11,4% due to the growth of GDP at constant prices in 2016 (by 7,8%) against the background reduction in the number of employed (table 2.5).

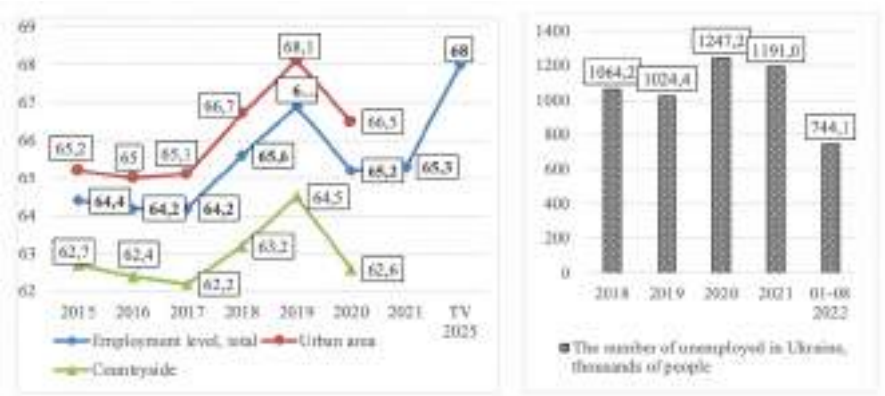

Figure 2.4 – The employment rate of the population aged 20-64 (%) and the number of unemployed in Ukraine (thousands of people)*

*Compiled according to the data of the State Statistics Service of Ukraine and the State Employment Service of Ukraine (Official website of the State Statistics Service of Ukraine, 2022; Sustainable Development Goals Ukraine, 2021; Official website of the State Employment Service, 2022).

**TV 2025 – Target value of the indicator in 2025 (Sustainable Development Goals, 2017).

In the reporting year, the labor productivity index was 111,4%, reaching the target values of the indicator for 2020 and 2030 (104% and 105.8%, respectively (Sustainable Development Goals, 2017)), but this trend was achieved, in particular, due to negative factor – reduction in the number of employed people in the economy.

The highest levels of labor productivity in 2020 were observed in the sectors of information and telecommunications, financial and insurance activities, and real estate transactions (see Table 2.5); these sectors had the highest growth rates of the indicator (from 30% to 48%). In industry, labor productivity reached UAH 207 thousand/person, in agriculture − UAH

97,76 thousand/person, and in construction − UAH 126,53 thousand/person. The lowest levels of the indicator are characteristic of the food, education, health care, art and sports sectors (about 34−40% of the state indicator), which is due, in particular, to the relatively small size of sectoral GVA and its downward trend for 2015 – 2020 (Official website of the State Statistics Service of Ukraine, 2022).

Table 2.5 – Labor productivity (according to GVA in comparative prices of 2016) of the employed in the sectors of the economy of Ukraine, thousand UAH/person (calculated according to the data of the State Statistics Service of Ukraine (Official website of the State Statistics Service of Ukraine, 2022))

SECTORS	**Years**						**2020 in % by 2015**
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	
1. Agriculture	91.63	97.58	95.31	100.4	98.96	97.76	*106.7*
2. Industry	192.91	202.59	206.14	211.61	207.74	207	*107.3*
3. Construction	64.23	73.63	92.53	97.17	114.57	126.53	*197*
4. Wholesale and retail trade	86.88	90.46	92.39	93.34	92.91	101.7	*117.1*
5. Transport, warehousing, postal and courier activities	152.29	157.19	164.42	165.84	171.6	147.59	*96.9*
6. Temporary accommodation and catering	53.12	56.2	58.67	61.39	62.68	53.65	*101*
7. Information and telecommunications	307.17	324.38	352.96	367.23	380.26	398.61	*129.8*
8. Financial and insurance activities	296.52	290.09	368.18	403.63	430.72	438.2	*147.8*
9. Real estate transactions	532.26	571.37	589.78	623.76	665.93	698.78	*131.3*
10. Professional, scientific and	154.22	159.92	174.07	175.1	188.31	166.14	*107.7*

SECTORS	Years						2020 in % by 2015
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	
technical activity							
11. Activities in the field of administrative and auxiliary services	91.17	97.22	99.94	102.09	104.28	95.5	*104.7*
12. Public administration and defense; compulsory social insurance	125.14	126.47	118.64	122.86	144.23	141.15	*112.8*
13. Education	62.26	61.74	63.22	63.47	65.63	62.3	*100.1*
14. Health care and provision of social assistance	58.36	57.12	57.98	56.63	60.53	64.6	*110.7*
15. Arts, sports, entertainment and recreation	66.27	67.23	68.33	70.7	73.65	67.16	*101.3*
16. Provision of other types of services	47.93	49.31	52.3	53.91	58.55	48.12	*100.4*
Total:	**141.61**	**146.55**	**151.13**	**154.44**	**157.29**	**157.7**	***111.4***

Based on the results of the analysis of the state of the SRD in Ukraine, the main trends in income, expenditures and employment were periodized, and expected (possible) trends in socially responsible production and consumption in the postwar period were identified (Table 2.6).

Table 2.6 – Periodization of trends in changes in income, expenses and employment of the population (вeveloped by the author on the basis conducted analysis of the SRB (Nikishyna, 2022).

Direc-tion	Pre-war period	War period *	Post-war period *
1. Dynamics of employment and wages	1. Reduction in 2015-2021 of the number of employees (by 5,1%) and the average registered number of full-time employees in sectors of the economy (by 12%). 2. Minor changes in the sectoral structure of employed and full-time workers: reduction in the share of education and growth in the share of the trade sector. 3. Growth of the nominal salary of full-time employees by 20,9%. 4. Increase in labor productivity (in comparable 2016 prices) by 11,4%, including in the agricultural sector – by 6,7%, industrial – by 7,3%, trade – by 17,1% 5. Growth in the employment rate of the population (aged 20-64) from 64,4% to 65,3%; in rural areas - decrease. SDG 8 not achieved. 6. Growth in 2015-2019 of the share of workers employed in jobs with harmful working conditions to 29,6%. *SDG 8 not achieved.*	1. Continuation of the trend of reducing the number of employed in most sectors 2. Increase of applicants for 1 vacancy from 5 people in 2021 to 12 people in 2022. 3. Wage cuts (except for the IT and trade sectors) 4. Decrease in labor productivity in most sectors 5. Intensification of the trend of growth of the share of workers in jobs with harmful working conditions	1. Stopping the trend of reducing the number of employed as economic sectors recover and create new jobs for the recovery of the country 2. Renewal of the trend of wage growth and labor productivity in sectors whose development is recognized as a priority for the development of the country. 3. Slowing down the trend of growth of the share of workers in jobs with harmful working conditions

2. Dynamics of incomes and expenses of the population	1. Structural changes in the total resources of households in the direction of increasing the share of cash income and reducing benefits and subsidies. 2. Growth for 2015-2021 in the structure of monetary income as a share of wages (by 10,9%) and reduction of pensions and social benefits (by 7,1%). 3. Reduction in the share of expenditure on food products in the structure of total household expenses (up to 50,1%). SDG 1 not achieved. 4. Unbalanced nutrition of the population, consumption of meat, dairy and fruit and berry products below rational standards. *SDG 1 not achieved.*	1. Structural changes in household resources: an increase in the share of benefits, subsidies, and the value of ancillary farm products. 2. Growth in the income structure of the social share. help 3. An increase in the cost structure of the food component, as well as health care costs	1. Slow growth of the share of cash income, preservation of the share of benefits and subsidies. 2. Continuation of the growth trend in the structure of monetary incomes of the share of pensions and social. help 3. Increase in the structure of total household expenses for health care and food 4. Unbalanced nutrition of the population

* Expected (possible) trends

During the war period, the relocation and forced migration of the population led to a change in the structure of the labor market, an imbalance between the demand and supply of labor both in the regional and sectoral dimensions. The tendency to reduce the number of employees and wages in most sectors of the economy (except the IT and trade sectors) intensified. As of July 2022, small and medium-sized businesses cut 1,07 million employees (Pyshchulina, Markevych, 2022). We should expect a decrease in labor productivity in most sectors, as well as a deepening of the pre-war trend of increasing the share of workers in jobs with harmful conditions.

Changes in the structure of the labor market during the war caused structural changes in the aggregate incomes and expenses of households (see Table 6). Thus, in the structure of the aggregate resources of households, an increase in the specific weight of benefits, subsidies, as well as the value of the products of the auxiliary economy is expected; in the structure of monetary income - an increase in the share of pensions and social assistance and, accordingly, a reduction in the share of wages. According to experts, the share of the population with incomes lower than the subsistence minimum, which in 2022 is UAH 2,481 for able-bodied persons, may reach 70% (Pyshchulina, Markevych, 2022). In the structure of aggregate household expenditure, expenditure on food and health care is most likely to increase, and the problem of nutritional imbalance will also worsen.

Stabilization of the labor market in the post-war period is the primary task of the state on the way to achieving national stability. Its implementation will be facilitated by the implementation of the strategic priorities of the country's post-war development, in particular, the restoration of the housing stock, ensuring a sustainable food supply, security of critical infrastructure facilities, and reforming the medical sector. As economic sectors resume their activities, it is expected that the trend of reducing the number of employed people will be suspended, new jobs will be created in sectors that are a priority for the country's post-war development, and the trend of increasing average wages and labor productivity will resume.

In the post-war period, it is most likely that the trends of changes in the incomes and expenses of the population, inherent in the war period, will be preserved (see Table 6). Against the backdrop of slow growth in the share of cash income, the share of benefits and subsidies will remain unchanged in the structure of household resources; the trend of increasing the share of pensions and social benefits in the structure of incomes will also continue due to the growth of the group of vulnerable segments of the population who cannot engage in economic activity due to age, physical disabilities or other reasons. Such population groups will require state assistance, given the trend of decreasing economic availability of food, basic goods and services, as well as the existing problem of nutritional imbalance.

In the postwar period, the economy will require deeper modernization than before the war, while a significant loss of labor resources could hinder the country's recovery unless systemic management

solutions are implemented. Increasing employment should be a central issue in Ukraine's postwar reconstruction. An integrated program is needed to ensure a living wage, minimum wage, support for social security, etc. (Pyshchulina, Markevych, 2022. One of the directions of the development of the SRB should be the creation of new jobs, in particular in the processing sector, and safe working conditions for all employees.

Today, Ukraine does not have a mechanism for state regulation and incentives for SRB. The only official document describing this urgent task is the Concept of Implementation of the State Policy in the Field of Promoting the Development of Socially Responsible Business in Ukraine for the Period up to 2030 (Concept, 2020) and the Action Plan approved for it (Action Plan, 2020). However, the Action Plan was developed in peacetime, so it does not take into account the possibility of adjusting measures to take into account the consequences of hostilities, including damage to the environment and enterprises, as well as the lack of investment and working capital of business entities not only for research but also for the organization of domestic production at the pre-war level.

In the post-war period, a transitional model of state policy to promote the development of the SRB will be implemented, focused on the implementation of strategic priorities for the development of the national economy. The institutional support for the SSR, approved in peacetime without taking into account the realities and trends of the wartime period, will need to be revised and supplemented. It is advisable to amend the Action Plan (2020) to expand the list of measures to stimulate socially responsible business, taking into account the consequences of military operations, and to justify, in the context of each recommendation, the corresponding adaptive organizational and economic mechanisms that will facilitate their practical implementation.

The current vector of Ukraine's socio-economic development is based on the principles and values of the European Union. Therefore, the implementation of the best European practices of state regulation and stimulation of the SRB is an important component of Ukraine's integration into the European space. An important task on this path is to formulate a state policy to promote the development of the SRB, improve the regulatory framework and introduce adaptive mechanisms for interaction between government, business and society in an unstable environment.

2.2. Current problems of the development of the tourism industry and the influence of state policy in the current crisis conditions

The material is devoted to the current problems of the state's tourism industry, their impact on the state of the state's economic development, and the main aspects of improving the state's economy management mechanisms in the context of the development of the tourism industry are defined. For most countries of the world, 2020 will be remembered as the year of the outbreak of the pandemic, which appeared as a result of the spread of the acute respiratory disease COVID-19. Modern tourism, without a doubt, integrates almost all industries. Tourism is definitely one of the highly profitable industries. Tourism forms up to 10% of the total GDP of EU countries. In the developed countries of the world, tourism contributes to the socio-economic development of countries. The purpose of this article is to: research the specifics of the development of the tourism industry as a type of activity in modern crisis conditions, assess the main problem points of the tourism sector in crisis conditions; to systematize world and domestic experience of supporting tourism in current conditions; evaluate possible scenarios for the restoration of tourism, taking into account the measures taken by the state. Such features of tour operating require significant organizational skills from the top management of the company, and the ability to effectively work process in the company. Therefore, the activity of a tourist operator is a natural combination of work cycles in relation to specific tours or programs. The article identifies the importance of the hospitality and tourism industry, which is a vital source of income due to tourism revenues and the attraction of foreign direct investment, as well as jobs, especially for women and youth. The start of hostilities on the territory of Ukraine, the closure of external and internal borders in February 2022, not only reduced the revenues of tourism companies to zero, but also led to significant losses in some cases. The Organization for Economic Cooperation and Development (OECD) predicts an unprecedented crisis and a reduction in tourism revenues in the world up to 45%, if the conflict continues until September, this indicator may reach 70%. Since the field of tourism is an important part of the economy of many countries, this will lead to a negative impact on the macroeconomic indicators of the countries in which the field of tourism is the most developed. Many countries have taken decisive measures to support the tourism sector, but this may not be enough to restore the

tourism sector. One of the main goals is to support tourism companies and their employees.

In the conditions of globalization and dynamic development of the world services market, the tourism industry is gaining more and more importance and priority. Tourism as one of the main strategic economic sectors, which makes an important contribution to the formation of the country's GDP and exports, occupies a special place in the system of international economic relations, promotes the strengthening of positive trends in the economic, political and socio-cultural life of society. For many countries of the world, international tourism has become the most profitable branch of the economy, and revenues from it are an important component of national budgets. According to various estimates, the tourism industry accounts for a third of world trade in services, approximately 7% of global investments, 5% of all tax revenues, and 11% of global consumer spending (Melnychenko et al., 2017).

The theoretical and methodological basis of the study is a dialectical method of cognition and a systematic approach to studying the peculiarities of the development of the tourism industry as a type of activity in modern crisis conditions, to assess the main problematic points of the tourism sector in crisis conditions; to systematize world and domestic experience of supporting tourism in current conditions; evaluate possible scenarios for the restoration of tourism, taking into account the measures taken by the state. The methodological basis was also fundamental developments of leading domestic and foreign scientists on this problem. The following research methods were used: abstract-logical (theoretical generalizations and formation of conclusions), calculation-constructive and comparison (analysis of the development of the tourism industry in modern conditions).

The tourism industry in extreme conditions in 2021 year. Last year put the tourism industry in extreme conditions and radically changed the approach of tourists to choosing countries for vacation. At the same time, the first half of 2021 was marked by the gradual recovery of tourist flows, both for Ukraine and for the world in general. There has been a significant rethinking of tourist routes and an increase in the level of domestic travel around the world. After analyzing the data for the first half of 2021, it is possible to note an increase in the number of visitors to Ukraine by 9% compared to the second half of 2020. During this year, we accepted one and a half million people from different countries, but this figure is 31% less compared to the same period last year (then the number of foreigners in Ukraine was 2 million) and 75% less than the figure for the same period

in 2019, when the number of foreign guests reached almost 6 million. We are observing a significant increase in visitors for the second quarter of 2021, their number was 4 times higher than the number of people admitted in the corresponding period of 2020 and reached 3.4 million (Tourism.gov.ua/blog).

In the first half of 2021, there is a positive trend in the increase in the number of tourists from countries such as Saudi Arabia (their number has increased 40 times to 14,000 people, while only 350 citizens came to Ukraine in the same period of 2020), USA (the number of tourists increased by 69.6% compared to last year and reached 34 thousand), Israel (26% growth, the number of tourists 26.6 thousand), and Transcaucasia countries (the number of Armenians increased by 100% (7,000), the number of tourists from Georgia increased by almost 40% (15,500) and Azerbaijan (16,000) increased by 67%. The traditional markets for Ukraine remain Moldova (368,000), Romania (109 thousand), Belarus (96 thousand) and Turkey (93 thousand) (Tourism.gov.ua/blog). 70% of foreigners who visited Ukraine are Europeans (10% less than last year), 24% are representatives of the countries of the Asian region (8% more than in 2020), 2.8% came from North America and only 1.7 % – citizens of the African continent (Tourism.gov.ua/blog).

The Covid-19 pandemic has played a crucial role in reducing the amount of international travel for people around the world. The Covid-19 pandemic played a decisive role in reducing the number of trips abroad for people all over the world, and in Ukraine in particular, today we can only estimate the damage caused by quarantine measures over the past year and a half. However, this situation became an impetus for the opening of new tourist markets and the rapid development of domestic tourism.

In the first half of 2021, Ukrainians traveled abroad by 15% more than last year. A total of 5.7 million Ukrainian citizens left. Turkey (774,000) and Egypt (the number of tourists increased by 88% to 705,000) remain traditional tourist destinations. New tourist centers have appeared, where more and more Ukrainians are starting to go, for example, the Dominican Republic - growth by 238% and 35 thousand tourists, which is 5 thousand more people than those who visited Bulgaria in the same period. Among other countries: Qatar (11.5 thousand), Maldives (10 thousand visitors, which is equal to the number of Ukrainians to France during the same period), Tanzania (7 thousand visitors), Sri Lanka (2.5 thousand visitors) etc.

In the new tourist reality, not only the cost of the tour and certain preferences come to the fore, but also quarantine restrictions, rules for entering the country and the situation with the spread of COVID-19 are taken into account.

The current state of development of the tourism industry in Ukraine. The modern industry of tourism is one of the most rapidly progressing branches of the world economy, which can be considered both as an independent type of economic activity and as an interdisciplinary complex. Today, the tourism industry is developing at a very fast pace and may become the most important sector of business activity in the coming years. Tourism plays an important role in job creation, and it is predicted that 2,500 new jobs will be created globally every day over the next five years. Covering many sectors of the economy, it becomes almost impossible to determine an accurate estimate of the number of workers employed in the tourism sector. In addition, solving the problem of real assessment is also complicated by the specific nature of work (seasonality, part-time work, temporary work, etc.). And yet, the number of people employed in the tourism sector is constantly growing. This is one of the few branches of the economy where the introduction of new technologies does not lead to a reduction in the number of working personnel. This is important because by absorbing more labor, tourism reduces social tension in society. In addition, world experience shows that the tourism industry can be developed even during economic crises, which is important for the countries of Eastern Europe. The costs of creating one workplace here are 20 times lower than in industry, and the turnover of investment capital is 4 times higher than in other branches of the economy. An example can be such countries as Argentina, Brazil, Mexico, Egypt, Tunisia, Peru and others (Karpenko et al., 2006).

Tourism is currently considered the most promising and leading industry in Ukraine. Tourism in Ukraine is gradually approaching the world level. More and more tourism enterprises are appearing. A close network of the tourist industry has been created, which includes accommodation, catering, as well as objects of educational, business, religious, sports, health and other purposes. The main goal of tourism development is to satisfy certain needs of the tourist in recreation and impressions that the tourist will receive during the trip, by providing services and goods that will make the trip comfortable and unforgettable and will contribute to the fulfillment of the purpose of the trip. It should be noted that in the tourism industry today there are many different classifications of tourism, which consist in

the selection of classes, forms, types in many directions. Currently, there is no specific classification, this can be explained by the fact that there are no clear forms and types in modern tourism. Tourism is divided according to various indicators: by means of transportation, purpose, duration and time of the trip (Gugul et al., 2018).

Types of tourism can be distinguished, specifically international tourism – a trip to another country, or foreign tourism. This type of tourism is divided into inbound and outbound. Outbound type of international tourism is a trip or journey of people permanently living in one country to another country. Inbound tourism is a trip outside the country of permanent residence. One of the priority types of tourism remains inbound tourism as a significant factor for replenishing the state budget and creating additional jobs. The development of inbound tourism is not only a source of income for the country's economic system, but also helps to activate relations between countries in the tourism process. A profitable industry of tourism can be considered when the flows of inbound tourism exceed the volume of outbound tourism by three times. Inbound tourism is one of the forms of international tourism. It should be noted that inbound tourism is travel within Ukraine by persons who do not permanently reside on its territory (Tsekhla, 2009). In order to increase the efficiency of the tourism sphere of the economic direction, it is necessary to improve the mechanisms for regulating economic activity and create conditions for investment activity through the formation of a new approach to the development strategy of the national tourist complex and the management system of tourist processes both at the state and regional levels (Gugul et al., 2018).

The tourism industry is one of the priority directions of the state's development. The experience of countries shows us that the direct development of tourism depends on the extent to which it benefits from state support. Any state, in order to receive income from the tourism industry, must invest in the study and research of its territory, for the assessment of tourism potential, the preparation of a tourism business program, infrastructure projects of resorts and state tourist centers, as well as in information provision and advertising. The tourism industry is one of the priority directions of the state's development. This is evidenced by the dynamism, high profitability, great positive socio-economic and cultural impact of tourism on the development of countries. In many countries of the world, tourism is one of the most priority industries, the contribution to the gross national income of which is 20-45%, and income from foreign tourism is the main source of foreign exchange. The contribution of tourism

to the overall supply of goods and services within the framework of the national regional economy of Ukraine is shown in the table. 2.7 (Calculated by the compilers based on the data of the State Statistics Service of Ukraine using the methodology of the auxiliary (satellite) tourism account) (USAID, 2022).

Therefore, the tourism industry in Ukraine not only brings a significant part of the income to the budget of tourism-developed states, but is also extremely promising and can undoubtedly become one of the main sources of income for the state budget of other countries. According to experts' forecasts, the level of annual growth of the tourism industry will be 5% in the coming years, which will provide an opportunity to create an additional 2 million new jobs (UNWTO, 2022).

Table 2.7 – Gross added value in tourism of Ukraine (USAID. National Tourist Organization of Ukraine. Tourist barometer of Ukraine)

Indicator	2018		2019		2020	
	Thou-sands UAH	% from gross domestic product	Thou-sands UAH	% from gross domestic product	Thou-sands UAH	% from gross domestic product
Gross value added created in tourism industries	412,498 376.51	11.6	502,202 848.27	12.62	5,349,47 632.15	12.6
Gross value added created directly in tourism (in basic prices)	173,749 626.99	4.9	195,687 259.17	4.92	1,651,25 166.98	3.91

The most recognized approach for assessing competitive advantages in tourism is the rating approach. One of the key ranking indicators of the country's competitiveness in the field of tourism is the Travel and Tourism Competitiveness Index, which is compiled by the World Economic Forum every two years and covers about 140 countries. The index of competitiveness in the field of tourism is calculated based on 14 indicators related to the entry of tourists, which are combined into four groups (sub-indices) that characterize the favorable environment in the country for the

development of tourism, state policy and the creation of favorable conditions in the field of travel and tourism, infrastructure, natural and cultural resources (Tourism Competitiveness Report, 2022).

In the rating of tourist competitiveness of the countries of the world, Ukraine occupies a rather low place. Thus, in 2007 it ranked 78th (with an index of 3.89 out of 7 possible), in 2009 – 77th (with an index of 3.76 and 3.84, respectively), in 2011 – 85th (with an index of 3 .83), in 2013 – 76 (with an index of 3.98), in 2017 – 88 (with an index of 3.5), in 2019 – 78 (with an index of 3.7). Our state was not represented in the 2015 rating, as no research was conducted. Compared to the 2017 study, Ukraine had the largest growth rate in the region, rising 10 places: from 88 to 78. Ukraine has different scores on aggregated components of the Tourism Competitiveness Index. The competitive advantages of Ukraine, according to the Travel and Tourism Competitiveness Index-2019, are health care and hygiene - 11th place (both in the world and in Europe), as well as (although with slightly worse positions) human resources and the market labor (48th place), price competitiveness of the tourism industry (19th place in the world), cultural resources and business trips (55th place in the world). As the economy stabilized and recovered, Ukraine effectively improved its business environment (124th - 103rd), security (127th - 107th) and international openness (78th - 55th) (table 2.8) (Dudchenko et al., 2021).

Today, Ukraine can be classified as one of the countries with an average level of tourism development, which does not sufficiently use the favorable conditions for the proper development of inbound tourism. The conducted analysis makes it possible to determine the directions of development of the tourism industry in Ukraine, which are seen in the need to strengthen the role of the state, which will be able to provide material support for the development of tourism; formation of an effective model of cooperation of private-state partnership, to adhere to the implementation of the "Strategy for the development of tourism and resorts for the period until 2026" (Zakon. Rada.gov.ua) .

According to the UN World Tourism Organization (UNWTO), the contribution of tourism to world GDP is 10%, and the total number of jobs directly or indirectly related to tourism is 11%, therefore a balanced state policy in the field of tourism is an important part of sustainable economic development of Ukraine in the world. "The development of tourism stimulates growth in related areas of the economy, which is particularly important for the regional development of Ukraine.

Table 2.8 – Dynamics of the global index of competitiveness of tourism in Ukraine (Dudchenko et al., 2021)

Place in the rating / Indicator	2009 year	2011 year	2013 year	2017 year	2019 year	Dynamics of changes during the period 2019/2009	rating (2019 year)
Business environment	100	76	114	124	103	-3	4,1
Security	93	82	77	127	107	-14	4,8
Health and hygiene	17	17	8	8	11	+6	6,5
Human resources	80	68	65	41	48	+32	4,8
Information and computer infrastructure	52	68	70	81	78	-26	4,5
The priority of tourism	96	101	84	90	92	+4	4,3
Perception of tourism in the country	62	107	101	78	55	+7	3,7
Price competitiveness	115	119	110	45	19	+96	5,9
Sustainability of the environment	83	88	92	97	114	-31	3,9
Air transport infrastructure	98	93	78	79	71	+27	2,7
Ground transport infrastructure	84	74	73	81	77	+7	3,1
Tourist infrastructure	62	53	50	71	65	-3	4,3
Natural resources	104	119	102	115	116	-12	2,2
Cultural resources	84	86	80	51	55	+29	1,9
General indicator	77	85	76	88	78	-1	3,7

In addition, we have extremely wide opportunities to attract year-round tourism thanks to our unique natural opportunities, rich historical and cultural heritage. The development of tourism is an important component of economic growth, and the approval of the Development Strategy will allow for more effective coordination of work in this direction.

The strategy for the development of tourism and resorts determines the approach of the state tourism policy. The strategy defines the approach of the state tourism policy in the following areas: tourist safety; regulatory and legal support; development of tourist infrastructure; development of human resources; marketing policy of tourism and resort development. The strategy provides that by 2026 in Ukraine: the number of foreign tourists

will increase by 2.5 times, the number of domestic tourists will increase by 5 times, the number of jobs in the tourism sector will increase by 5 times, the filling of budgets of all levels from the implementation of tourism activities will increase by 10 times, the number of subjects of tourist activity will increase 5 times, tourists will spend up to 80 billion during their travels in Ukraine. hryvnias, a positive image of Ukraine as a country attractive for tourism will be created (me.gov.ua/News).

"The development of a tourism strategy is one of the conditions that we must fulfill as part of the implementation of the Association Agreement with the EU. We are already working on its implementation: we are creating a plan of measures for the implementation of the Strategy, we are conducting an active dialogue with representatives of Ukrainian business, we are working on the legislative framework," - noted Deputy Minister of Economic Development and Trade of Ukraine Mykhailo Tatarchuk (me.gov.ua/News).

Today, Ukraine loses to European countries in many indicators of the competitiveness of tourist services, because it does not pay due attention to this area, and irrationally uses its competitive advantages. Our state is practically uncompetitive, which is due to insufficient development of tourism infrastructure; ineffectiveness of state policy; lack of formed attractive tourist image of the country (Polkovnycheno, 2018).

Therefore, increasing the competitiveness of the tourism sector is a key task of the economy of modern Ukraine. It is important to focus efforts on providing tourists with not only the availability of cultural and natural objects for viewing, but also safety, high standards of hospitality, improving the quality of infrastructure, and a reasonable price policy. At the same time, it is necessary to constantly work on ensuring the effective and comprehensive use of the existing potential, creating a competitive national tourist product and promoting this product on the European and world market of tourist services (Dudchenko et al., 2021).

The economic functions of tourism primarily include the economic benefits it provides. Thus, tourism stimulates the development of infrastructure elements – hotels, restaurants, trade enterprises, etc. It causes an increase in the income part of the budget due to taxes, which can be direct (visa fee, customs duty) or indirect (an increase in the wages of workers causes an increase in the amount of income tax paid by them to the budget). In addition, as mentioned above, tourism has wide opportunities for attracting foreign currency and various types of investments. An equally important economic function of tourism is the diversification of the

economy, forming industries that serve the tourism industry, ensures the growth of the population's income and the improvement of the nation's well-being level (USAID, 2022).

Also, the impact of tourism on economic development is manifested in the increase in business activity and the expansion of the production of goods and services as a result of the increase in solvent demand at the expense of foreign and local tourists. From an economic point of view, the attractiveness of tourism as a service industry lies in a faster return on investment and income in freely convertible currency. In many countries, tourism is one of the top three leading industries of the state, develops at a fast pace and plays an important social and economic role, as it: increases local incomes; creates new jobs; develops all industries related to the production of tourist services; develops social and industrial infrastructure in tourist centers; activates the activity of folk crafts and the development of culture and promotes them; ensures an increase in the standard of living of the local population; increases foreign exchange earnings (Dudchenko et al., 2021).

But the positive impact of tourism on the state's economy occurs only if it develops comprehensively, that is, it does not turn the country's economy into a service economy. In other words, the economic efficiency of tourism implies that it should develop in the state in parallel and in connection with other branches of the socio-economic complex. Studying the availability of recreational and tourist potential and the presence of all components of an independent branch of the national economy, it is necessary to consider the issue of creating a clear state policy in the field of tourism and implementing coordinated mechanisms for its implementation. Foreign experience shows the great benefit from inbound tourism, so each state resorts to many measures and develops a tourism policy. In the conditions of the unstable political and economic situation in Ukraine, it is important to investigate the development of inbound tourism and methods of its stimulation. The share of inbound tourism in the world gross national product is almost 10%, as well as 15% of global investments and 11% of all tax collections, and in Ukraine tourism forms approximately 1% of the gross domestic product, while in economically developed countries this indicator is 6 -8% (Gugul et al., 2018).

Inbound tourism is closely related to foreign direct investment in the country's economy. In addition, due to inbound tourism and sufficient financing of this industry, infrastructure, such as transport, is rapidly

developing, which in the future will allow not only the tourism industry to grow economically (Table 2.9).

Table 2.9 – Entry of foreigners and stateless persons into Ukraine and departure of Ukrainian citizens abroad according to the data of the State Border Service of Ukraine (persons) (data provided by the State Border Service of Ukraine at the request of the National Tourism Organization of Ukraine) (USAID, 2022)

Year	Entry of foreigners and stateless persons into Ukraine	Departure of citizens of Ukraine abroad	Balance
2009	20,798,342	15,333,949	5,464,393
2010	21,203,327	17,180,034	4,023,293
2011	21,415,296	19,773,143	1,642,153
2012	23,012,823	21,432,836	1,579,987
2013	24,671,227	23,761,287	909,940
2014	12,711,507	22,437,671	-9,726,164
2015	12,428,286	23,141,646	-10,713,360
2016	13,333,096	24,668,233	-11,335,137
2017	14,229,642	26,437,413	-12,207,771
2018	14,342,290	27,976,681	-13,634,391
2019	13,709,562	29,345,897	-15,636,335
2020	3,382,097	11,251,406	-7,869,309

The industry of modern tourism is the most profitable and promising in terms of its growth rates among the branches of the world economy. The main goal of tourism development is to satisfy certain needs of the tourist in recreation and impressions that the tourist will receive during the trip, by providing services and goods that will make this trip comfortable and unforgettable and will contribute to the fulfillment of the purpose of the trip. Inbound tourism remains one of the priority types of tourism as a significant factor for replenishing the state treasury and creating additional jobs. The development of inbound tourism is not only a source of income for the country's economic system, but also helps to activate relations between countries in the tourism process. Further research should be aimed only at determining additional stimulators of increasing the level of inbound tourism in Ukraine (Gugul et al., 2018).

The strategic goal of the development of tourism in Ukraine is to create a competitive tourist product that will be able to satisfy the needs of tourists as much as possible and, on this basis, ensure the comprehensive development of territories and their socio-economic interests. Today, Ukraine has all the prerequisites for the intensive development of domestic and foreign tourism: features of the geographical location and topography, favorable climate, rich natural, historical-cultural and tourist-recreational potential. However, the development of this important area of the national economy is still insufficient, because a large part of natural territories and objects of cultural heritage are unsuitable for tourist visits, tourist infrastructure generally does not meet quality parameters, and tourist services in most sectors of the tourism industry do not meet the requirements for the quality of service (Huk, 2018).

Tourism activity significantly affects the formation of the state budget, and therefore supporting the functioning of the tourism industry in difficult economic crisis conditions is an important task, both at the national and regional levels. Inbound tourism as a significant factor in increasing foreign exchange earnings and creating additional jobs should become one of the priority types of tourism in Ukraine. Increasing competition in the world market of tourist services is increasingly leading to the transfer of Ukraine to the "periphery" of tourist flows. According to the World Tourism Organization (UNWTO), the share of Ukraine in tourist flows in Europe is about 4% and about 0.9% – in all-European revenues from tourism activities (World Travel & Tourism Council, 2014).

The difficult political and economic situation in Ukraine restrains the development of the tourism industry. The situation of uncertainty scares away potential foreign tourists. Therefore, to improve the situation, it is necessary, first of all, to conduct a competent information policy aimed at creating a positive image of the country. The scale of tourist flows depends to a significant extent on the political and macroeconomic situation (primarily, inflation, exchange rate changes), real incomes of the population, the availability of tourist infrastructure facilities and the image of tourist facilities. In recent years, there has been an increase in outbound tourism in Ukraine due to a significant reduction in the interest of foreigners in Ukraine. Despite the significant potential of the tourism industry, in Ukraine, over a long enough period of time, there has been an increase in the gap between the amount of income and the outflow of funds from the country, directly or indirectly provoked by the import of tourist

services: from payment transfers to foreign tour operators and other subjects of the host party – to personal expenses of tourists, which are not taken into account by official statistics (Huk, 2018).

Tourism is one of the most promising areas of socio-economic development of regions. Today, the development of tourism is restrained by many factors, including the imperfection of the legislative framework, the limited range of services offered, and the lack of funds for the reconstruction of historical and architectural monuments and comprehensive information about possible tourist routes. This list can be continued. In Ukraine, the tourism industry sector as such is not developed. A variety of tourist services can be boasted mainly by millionaire cities, cities of generally recognized recreation and tourism zones, and some historical and cultural centers. At a time when in most cities of Ukraine it is possible to develop industrial, recreational, ecological, even extreme and other types of tourism. Analysis of the state of the domestic tourist market indicates that the development of tourism in Ukraine is only at the initial stage (Gugul et al., 2018).

Ukraine belongs to the group of countries with an insignificant influence of the tourism industry on the development of the national economy. The contribution of the tourism industry in our country is estimated by experts at 1.3 million dollars USA or 1.4% of GDP, and the Ukrainian tourism sector employs 1.2% of the total number of employed people in the country. For comparison, the tourism sector in Poland is valued at almost 8 million dollars USA or 1.7% of GDP, employment – 1.7% of the total number of employed persons in the country; in Turkey – 35.9 million dollars. USA or 5% of GDP, employment – 2.3% of the employed population (World Travel & Tourism Council, 2014).

The low level of capacity utilization of the tourism potential of Ukraine is also confirmed by the small volume of export of tourist services. In Ukraine, the share of export of tourist services of structures and export of goods and services is only 0.7%, and in European countries – approximately 30%. In most developing countries, foreign tourism accounts for 10-15% of revenues from the export of goods and services. According to the experts of the World Tourism Organization, the world tourism market has been growing for many years in a row and continues to demonstrate stability, despite the difficulties, which are primarily related to ensuring security. On the other hand, having all the prerequisites for the proper development of the economy at the expense of tourism, Ukraine is still inferior to many countries of the world. Thus, according to the index of

competitiveness in the field of travel and tourism in 2017, Ukraine received a rating of 3.5 points out of seven possible and was in 88th place among 136 countries of the world, having lost 12 positions on this index compared to 2013 (World Travel & Tourism Council, 2014).

In June 2020, the head of the Office of the President of Ukraine, Andriy Yermak, held a conference call with the heads of regional state administrations on issues of tourism development. Deputy heads of the Office of the Head of State, Minister of Culture and Information Policy Oleksandr Tkachenko, Minister of Infrastructure of Ukraine Vladyslav Kryklii, Minister of Community and Territorial Development Oleksiy Chernyshov, Minister of Economic Development, Trade and Agriculture Ihor Petrashko and others also took part in the meeting. "We want Ukrainians, not having the opportunity to go abroad this year, to start traveling through our picturesque country," said Andriy Yermak, opening the meeting (President.gov.ua.).

He tasked the heads of State Administrations to prepare a concept for the development of domestic tourism in their regions within a week. In particular, identify three to five "tourist magnets" in each oblast – the most attractive objects of historical, cultural and natural significance from the point of view of tourism. On the basis of these proposals, a national program for the development of tourism in Ukraine and relevant regional programs will be developed as its components. Tasks within the framework of this program will be implemented over the course of three to four years and in subsequent years. The head of the State Tourism Development Agency of Ukraine Maryana Oleskiv noted that, in addition to the list of tourist attractive locations in the region, the local authorities should develop tours for three, five and 10 days, as well as predict how to get to one or another tourist object . "We are ready to cooperate with the local authorities if something still needs to be improved: somewhere a couple of kilometers of a good road are missing, somewhere we need to remove some terrible market that spoils the impression. In order to make these locations more interesting for tourists," Maryana Oleskiv emphasized (President.gov.ua.).

In addition, regional leaders should pay attention to event tourism. In particular, 5-10 of the most interesting events of the cultural life of the region should be identified in each of the regions and promoted as one- or two-day tours. For example, the Ministry of Culture operates the "Small Cities – Big Impressions" program, for which UAH 40 million was

allocated this year, and after the end of the quarantine, these funds can also be used for the development of cultural events in the regions. In addition, the meeting raised the issue of supporting enterprises involved in the tourism industry to provide better services.

The Minister of Infrastructure reported that consultations are currently ongoing with the specialized committees of the Verkhovna Rada regarding the development of a legislative initiative to exempt domestic air transportation from paying VAT. This will help make domestic flights cheaper and stimulate the recovery of air passenger traffic. Work is also underway to liberalize the visa regime for citizens from a number of countries who come to our country for the purpose of tourism. After the adoption of the relevant decision, visit-tours to tourist-attractive places of Ukraine are planned, therefore already now the heads of regional authorities, together with local authorities, should anticipate an increase in tourists, including foreign ones, in their region (President.gov.ua.).

The heads of regional state administrations should form tourism development departments in the structure of regional state administrations, as well as organize relevant consultative and advisory bodies at regional state administrations with the involvement of all interested parties. After all, tourism is not only a cultural component, but also the economic development of the region, and therefore there should be clear coordination on the ground regarding the development of tourism as an industry.

The Minister of Culture and Information Policy, for his part, announced the "Travel Ukraine" program, within which a challenge will be held – famous people in the country and at the local level will share their impressions of traveling in Ukraine. Posts with stories about which places are worth visiting, each of them will publish on social networks with the appropriate hashtag #travel Ukraine. Summarizing the conversation, Andriy Yermak urged everyone to act very quickly to adopt the necessary decisions and relevant laws regarding the tourism industry, so as not to lose this tourist season (President.gov.ua.).

Promotion of the development of inbound tourism is a consequence of the interaction of internal and external socio-economic processes that create the need for travel and demand for tourist services. The demand for tourist services is formed both in the country for domestic and international tourism services, and outside its borders for international inbound tourism services, and it is carried out by the offer created on the market by the subjects of the tourism market. Factors influencing the development of inbound tourism are favorable natural conditions, especially in the

Carpathian region, as well as a rich historical and cultural heritage, which is concentrated in every region of Ukraine. In order for any type of tourism to develop, not only inbound tourism, an appropriate legal basis is necessary, which will correspond to the conditions of modern society and the economic activity of business entities. That is, a high-quality legal framework is needed for the development of social and economic aspects of tourism. Since inbound tourism is closely related to international activities, the political situation in the country is of particular importance, which manifests itself in the stability and openness of the policy, the stimulation of national and foreign investments in the development of inbound tourism, the facilitation and simplification of tax, customs and visa procedures regimes (Gugul et al., 2018).

Among the most important factors of tourist mobility of the population, the following can be distinguished: socio-economic (welfare, per capita national income, general cultural level of citizens, cost of travel, accessibility of connections, belonging of residents to one or another social group), territorial (production -economic and historical importance of regions, population, area of the settlement, density of buildings), organizational (extensive location of the transport network, convenience of using rolling stock and travel, quality of service, travel time), and natural and climatic (Strelets, 2011).

The effectiveness of tourism management can be considered in two directions: economic and social. The basic and most simple are the calculations of the frequency of trips and the intensity of the trip. From the point of view of the economy of the city and the region as a whole, tourism can be tentatively considered as one of its branches. In this case, a comparative assessment of the effectiveness of various options for the development of tourism should be carried out taking into account the influence of this industry on the functioning of other industries. It is possible to accept the profit received by the socio-economic sphere of the region from tourism as a criterion of optimality. In the general case, the specified profit will be equal to the sum of income from inbound and outbound tourism, minus the costs borne by the economy of the region for the development of tourism. The specified profit represents that part of the profit received by the industry, which comes to the disposal of the region and is spent outside the industry itself (that is, the part of the profit spent on the expanded reproduction of the tourism industry is not taken into account) (Martsenyuk, 2015).

The components of income can be presented in an expanded form separately by reception and departure of tourists. Upon receiving tourists, the following will be received: direct income from inbound tourism in the form of various regional and federal taxes paid by travel agencies and other participants in the tourism business; revenues from tourists' expenses for services; indirect income from loading hotels, bars, casinos, restaurants, entertainment, visiting historical and cultural centers; indirect income from the creation of additional jobs. On sending tourists: direct income from taxation of tourist activity on sending tourists, which is paid by travel agencies and other business participants; income from additional loading of vehicles and other facilities in the field of services involved in sending tourists; indirect income from the creation of additional jobs in the tourist dispatch service system. There are also individual-psychological, social-geographic and a number of other factors that are clearly reflected in the processes of tourist flows (World Travel & Tourism Council, 2014) for the development of inbound tourism.

The main directions of the tourism policy of Ukraine include: protection of the rights of travelers; protection of the interests of producers of domestic tourist products; comprehensive support of domestic and inbound tourism, which can be manifested in the form of:

a) direct investments in the formation of the tourism industry;

b) scientific and advertising and information support for the promotion of the national tourist product on the world market;

c) tax and customs benefits that stimulate the inflow of investments (Tsekhla, 2009).

State policy in the field of tourism. State policy in the field of tourism is carried out by: defining and implementing the main directions of state policy in the field of tourism, priority directions of tourism development; determining the order of classification and assessment of tourist resources of Ukraine, their use and protection; directing state funds to the development and implementation of tourism development programs; determination of the basics of tourism security; regulatory regulation of relations in the field of tourism; organization and implementation of state control over compliance with legislation in the field of tourism; participation in the development and implementation of international tourism development programs.

State regulation of inbound tourism is a set of forms and methods of influence of state authorities on the development of the tourism industry and the creation of conditions for effective cooperation of state authorities,

local self-government and the private sector in the development of tourism. State regulation of the tourism industry is necessary for: protection of the consumer of tourist services; increase in income from recreational and tourist activities; organization of recreational and tourist activities; preservation and protection of recreational and tourist resources (Uncle, 2007).

The goals of state regulation of inbound tourism: ensuring the rights of citizens to rest, freedom of movement, restoration and strengthening of health, safe life and environmental health, satisfaction of spiritual needs and other rights, enshrined in the Constitution of Ukraine; tourism safety, protection of the rights and legitimate interests of other subjects of tourism activity and their associations; preservation of the integrity of tourist resources of Ukraine, their rational use, protection of cultural heritage and the environment; creation of favorable conditions for the development of the tourism industry, support of priority areas of tourist activity (Uncle, 2007).

The Verkhovna Rada of Ukraine adopted the Law "On Tourism" with amendments of 2020 No. 324/95-VR dated 15.09.1995, version dated 16.10.2020, which states: "The state declares tourism one of the priority areas of development of national culture and economy and creates favorable conditions for tourist activity". Importantly, this definition is in line with the recommendations of the Hague Interparliamentary Conference on Tourism, held on 10–14 April 1989, which stated: “Countries should define their national priorities and the role of tourism in the hierarchy of such priorities, as well as the optimal strategy for tourism development within the framework of these priorities" (State Tourism Administration of Ukraine, 2022).

The main factor that radically changed the tourism and hotel business is global digitalization, which received an additional acceleration during the pandemic. A lot of services began to appear online, which caused serious changes in the labor market. First of all, the trend of employment increased, which is largely related to the lockdown introduced in many countries. In addition, in the field of tourism and hospitality, in connection with the need to comply with sanitary and epidemiological norms, contactless service technologies began to be widely used, in particular, in hotels, guest check-in and check-out procedures began to be carried out using mobile applications and gadgets. Many tourists began to mainly use digital

information and communication technologies to choose a destination in which they plan to book tourist services (Morozov, 2019).

The so-called category of digital travelers clearly began to increase sharply, which required the improvement of information and communication support for tourist and hotel activities. Currently, increased attention is needed to the information and communication support of tourist destinations (Morozov et al., 2019).

Digitization of tourism and hotel activities has led to the need to increase professional requirements for staff in terms of the availability of digital communications. Digital competences are becoming not only a requirement of the labor market, but also a necessary condition for a comfortable life and communication of a modern person. Digital competence acts as a base without which personnel cannot be competitive in many areas of social and economic activity. Domestic and foreign researchers emphasize the necessity of digital education for employees of the tourist and hotel industry (Bartvan, 2018).

Global digitization radically changes the labor market, generates new forms of work, in particular, an innovative model of work and employment, in which creativity, the ability to find innovative non-standard solutions, critical thinking, etc. are the most important requirements for personnel. Within the framework of this concept, a new direction of economic activity is developing, which has received the name of the on-demand economy. The use of digital information and communication technologies provides the possibility of cross-border employment. In many spheres of socio-economic activity, the digitization of business processes is taking place at a rapid pace, which makes it necessary to constantly improve the digital qualifications of personnel. Permanent learning of new skills throughout life (lifelong learning) will become an integral attribute of any employee. Many countries are already actively engaged in modifying their education systems to take into account the new reality. Such countries as Singapore, Finland, Sweden, Norway and a number of others were the first to create their own strategies for the development of the digital economy, in which a significant role is assigned to the issue of personnel training. After all, in the conditions of the digital economy, the key assets of companies are information and personnel. Many countries are already actively transforming their education and training systems, focusing on the formation of digital competencies (Frey, et al., 2019).

Digitization of the economy requires the possession of not only digital competencies, but also self-development skills, the ability to adapt

and critically assess the current situation, the ability to make non-standard decisions in conditions of uncertainty, communication skills and effective teamwork (Bartvan, 2018).

In order to support the development of the tourism industry in Ukraine, the state authorities have created the Concept of the state targeted social program for the development of sports and tourism infrastructure in 2011-2022. The purpose of this program is the development of sports and tourism infrastructure, the creation of conditions for obtaining the right to hold winter sports in Ukraine of the 2022 Olympic and Paralympic Games (Goeldner et al., 2002), which will provide an opportunity to promote the development of inbound tourism.

As a result of certain changes in the structure of state power in Ukraine, the Ministry of Culture and Information Policy is the main specialized body regulating the tourism industry. Accordingly, the central body of the executive power, which ensures the implementation of state policy in the field of tourism and resorts, is the State Tourism Development Agency of Ukraine. The priority areas of its activity are (State Tourism Development Agency of Ukraine): ensuring the development of inbound and domestic tourism, resorts; decentralization, support of local initiatives in the development of tourism; achievement of effective public-private partnership; dissemination of information about Ukraine and its tourist opportunities on the international tourist market and within the country.

In the regulation of inbound tourism, a special place is occupied by the observance of international legal acts in the field of tourism, which are governed by most countries of the world. It was found that inbound tourism is one of the most promising sectors of the economy and economy. It creates the necessary conditions for the establishment of international relations, helps preserve the cultural, historical and natural heritage of the state, and raises the spiritual and cultural level of the country's population. But its operation and development will be impossible, unpromising and unprofitable without the help and support of the state authorities, which must clearly regulate, promote and help the tourism industry and inbound tourism bring a lot of income to the state treasury. For this, state tourism authorities should adopt new and update old laws, simplify customs and visa control, so that it is easy, fast, affordable and safe for tourists to visit our country, as well as for foreign tourists to visit Ukraine (Gugul et al., 2018).

2.3. Bioeconomy development perspective in Ukraine on the basis of clustering: EU experience implementation

The awareness of the scientific and political public of Europe of the need to develop and implement new approaches to the preservation of the natural environment, biotic and landscape diversity as interconnected indispensable components of the human habitat and the guarantee of further development of society led to the formation of a number of new approaches to solving organizational tasks of nature protection and understanding them scientific basis from a new point of view. At the same time, as a result of historical prerequisites, Ukraine inherited many traditions regarding nature protection, thanks to which it significantly lagged behind in the development of the process of formation and implementation of systemic approaches to the active preservation of the natural environment in conditions of its significant anthropogenic transformation.

According to the estimates of the Ministry of Economy, the gross domestic product (GDP) of Ukraine decreased by 30.4 percent in 2022, which is the largest drop in recent history of Ukraine (Ministry of Economy..., 2022). The total amount of economic losses from the war at the end of 2022 amounted to 700 billion dollars and significantly exceeded the country's GDP (Damage of Ukraine, 2023). The number of people in Ukraine living below the poverty line has increased more than 10-fold since the beginning of the full-scale war (from 2.0% to over 25.0%). At the current rate, by the end of 2023, the number of Ukrainians living below the poverty line may increase to 55%. Damages and losses caused to land and water resources, the surrounding natural environment and atmospheric air, according to the State Environmental Inspection of Ukraine, reached about 1.7 trillion hryvnias (Public Report, 2022).

This is certainly the trigger for deepening economic, social and environmental crises. Therefore, it is time to comprehensively solve the problems of preserving and restoring natural, physical and human capital, stimulating the economic activity of businesses to ensure sustainable economic development and the future of our country in the post-war period, which is consistent with the Sustainable Development Agenda until 2030 and the Paris Climate Agreement, as well as development and creation of methods of promotion and implementation of ecologically safe types of products and services, namely, ecological marketing strategies (Kashchena, 2021). The need to live in a prosperous, healthy environment, with fresh air, clean water, quality food and a stable climate, actualizes the

development of an effective strategy for post-war reconstruction and economic development of Ukraine on an innovative basis. Its basis should be the concepts of greening of social production, resilience of socio-economic systems and "build back better" (Build Back Better), which are oriented towards "green" recovery with observance of the principles of fair, inclusive and transparent implementation of regeneration actions (Fig. 2.5) according to the existing plan (Recovery Plan, 2023).

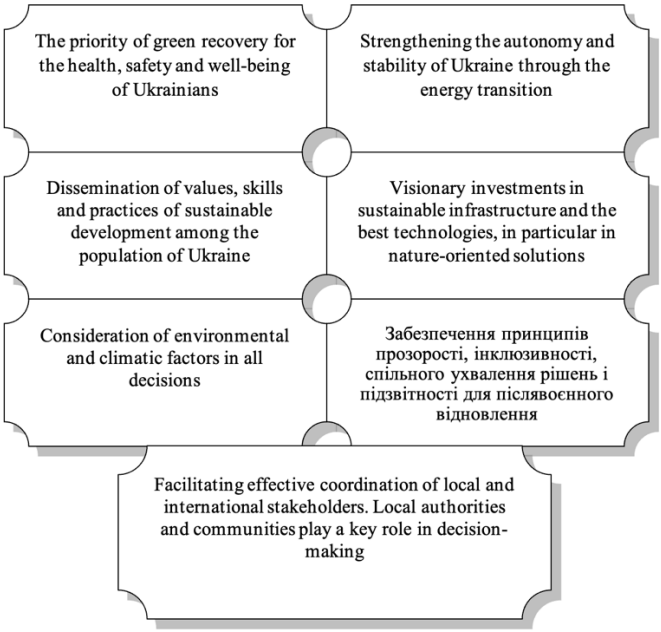

Figure 2.5 – Principles of "green recovery" of the economy of Ukraine (Ukraine, 2022)

On the way to restoring and building the economy of the future, integration into the world political, economic and business community, Ukraine must already today comply with the requirements of the "green economy", innovativeness, transparency and responsibility of business, reducing the negative impact on the environment and society, etc. (Kovalevska, 2021). In the context of ensuring sustainable innovative development, digitalization and environmentalization are drivers and guarantees of quality business transformations of various intensity and orientation (Fig. 2.6).

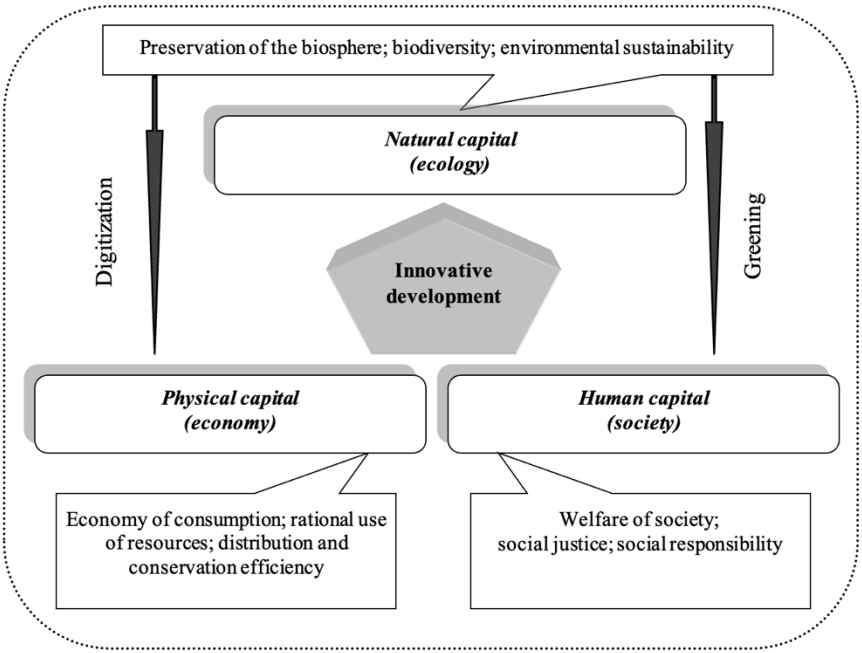

Figure 2.6 – Drivers and determinants of sustainable innovative business development

The defining concept of ecologization of the economy is the transition to the bioeconomy as an energy-efficient, resource-saving, innovative and socially inclusive model of development, which is based on the optimal balance between natural, physical and human capital, and involves the use of innovations (information and communication, technological, environmental, social, etc.) and changing the cycle of value creation through the use of digital technologies.

In Ukraine, the bio-economic development strategy has not yet been formed, the development of biotechnology is taking place at a slow pace (primarily due to the development of agricultural technologies), and their application is only partial. The main economic spheres in the national economy where biotechnology is applied are agriculture, the pharmaceutical industry, the food industry, as well as bioenergy.

Bioeconomy is a mechanism capable of ensuring the achievement of sustainable development, it has a number of positive effects on all studied areas (economic, social and environmental). Bioeconomy is generally focused on ensuring economic growth, sustainability, well-being of mankind in all forms through the economy of the future, dedicated to human life, with the help of rational use of ecological resources. Bioeconomy is a form of economic activity based on the balanced interaction of three systems: economic, ecological, social, and is determined by the processes of mutual exchange of renewable biological resources with the aim of ensuring a high level of quality of life and preserving the ecological balance for future generations.

To date, the development of the biotechnology industry in Ukraine is a non-priority sector due to the lack of sufficient funding from representatives of small and medium-sized businesses, as well as state programs. A large number of universities specializing in scientific research and the presence of a strong scientific base are the foundation for the creation of "know-how". At the same time, the use of the cluster model will allow to change the innovative structure of the country's economy in a short period of time, to launch large-scale production of innovative products. It should be noted that the stimulation and support of clusters in the EU fell under the direct influence of the strategic document "Europe 2020". One of the main factors in strengthening the EU economy is sustainable growth based on flagship initiatives, such as "Efficient use of Europe's resources" - involves supporting the transition to a low-carbon economy by increasing the use of renewable energy sources, modernizing transport, reducing resource intensity and promoting energy efficiency; and "Industrial Policy in the Age of Globalization" - improving the business environment, in particular for small and medium-sized businesses, as well as supporting the development of a strong and sustainable production base that will allow global competition. Also, support for clusters in the EU is based on: optimization of connections between clusters and framework programs; provision of additional powers and financing by the European Fund for Regional Development of a number of program initiatives, in particular INTERREG; further development of the "Competitiveness and Innovation" program; development and development of the new program "Regions of Knowledge" (RoK) within the framework of the new Eighth Framework Agreement, which, according to its creators, maximally contributes to the intellectualization of economic activity in the EU.

The leading program for increasing the competitiveness of enterprises is the "Competitiveness of Small and Medium Enterprises" (COSME), which was developed as part of the "Europe 2020" strategy for the development of small and medium enterprises for 2014-2020, the budget of which is 2.3 billion euros . A key element of this program is the creation of conditions for access of small and medium-sized enterprises to financial resources (Lysak, 2022).

Stimulating the competitiveness of clusters creates an environment for their development and generation of ideas. The EU actively supports such a policy aimed at strengthening existing clusters and promoting the emergence of new ones. Current cluster management policies seek to establish an enabling framework to support the development of new industries and innovations and the discovery of new value-added chains. It is very difficult to effectively manage a cluster, because there is a large network of universities, enterprises, public organizations, and research institutes operating in the cluster, which have their own interests and need to coordinate in order to achieve the common goal of the development of this cluster. A number of initiatives are functioning in the EU to support the development and strengthening of the competitive advantages of innovation clusters (Table 2.10).

In general, it is worth noting that the operating environment for high-tech companies in Europe is becoming less attractive than in other geographical areas.

Taking into account market demand and the strengthening of the competitive environment of other regions, the EU lacks funding and foreign investments, and venture funds do not ensure the implementation of all projects that arise in new EU countries. The legal environment plays an important role in increasing the level of innovation and rapid development of the EU countries in the biotechnology industry. EU projects and initiatives have a positive impact on solving major problems in the international environment.

The "Europe 2020" program is aimed at activating goals for achieving success in innovative areas of development and technological progress among EU member states. In addition, interaction and cooperation encourages research programs, knowledge and research implementation, as well as the establishment of a scientific infrastructure between companies for the transfer of technology and expertise.

Table 2.10 – Initiatives to support the formation and implementation of innovation clusters by EU countries

Name of the initiative	Characteristic
1	2
1. Network "Internal network of technologies" TCI (TechCityinsider Network, 1998).	A global network of organizations and expert practitioners with in-depth knowledge of competitiveness, innovation and cluster development.
2. The European Foundation for Cluster Excellence, (2003).	A non-profit organization that aims to provide expertise in policy and practice, providing a single platform for professional development, bringing together best practices and knowledge based on a European approach, and sharing experiences in cluster development. The Foundation offers a wide selection of training programs on cluster management, which have been developed within the framework of the "Cluster Excellence" initiative. Programs range from short-term programs partnering with business schools to long-term programs at the regional level.
3. Initiative «Europe INNOVA» (PRO INNO Europe, 2006).	An initiative of the European Commission Directorate for Enterprise and Industry (Directorate General for Enterprise and Industry), which aims to become a laboratory for the development and testing of new tools to support enterprise innovations with the aim of their faster creation and implementation. The initiative unites public and private structures that support innovation, such as innovation agencies, technology transfer centers, business incubators, financial intermediaries, cluster organizations, etc. Within the framework of the initiative, 200 public and private organizations in eight traditional and high-tech sectors cooperate, which exchange experience in managing clusters and are engaged in solving problems arising as a result of globalization.
4. European Cluster Memorandum, (2007).	The document contains recommendations on the priorities of cluster policies both at the level of the EU as a whole and for individual states. Special emphasis is placed on cross-border cooperation. The main idea of the memorandum is to improve the quality of European cluster policies.

Continued table 2.10

1	2
5. The European Cluster Observatory, (2007).	The online platform (Internet resource) provides access to information about clusters and cluster policies of European countries. Provides access to the library, graphic and visual presentations, which helps in the analysis of the cluster market.
6. European cluster policy group, (2008).	Founded by the European Commission and authorized to advise the Commission and EU countries on effective support and development of world-class clusters in the EU.
7. Initiative "European Business Support Network" (Enterprise Europe Network – EEN, 2008).	Offers support and advice to entrepreneurs and companies in Europe, in particular helping small and medium-sized enterprises with access to innovation networks, finding the right business partner and providing information on EU legislation, with the aim of realizing as many opportunities as possible in the EU. This coordinated network is based on the combination of the Innovation Transfer Center and the European Information Center, and consists of about 600 local friendly organizations in more than 60 countries around the world.
8. European Innovation Platform for Cluster, (2008).	A web-based interactive space that provides easy access to knowledge, learning resources, indicators of development, implementation and evaluation of innovative policies. The platform informs users about innovative systems operating in different countries, provides statistical comparative analysis and helps develop and implement effective policy solutions. In a broader sense, the platform facilitates the exchange of knowledge and strengthens cooperation between countries and regions.
9. The European Cluster Excellence Initiative, (2009).	The purpose is to improve cluster management systems and develop standards for assessing the quality of cluster management. The scheme used for the quality-labelling scheme of cluster management was developed by the European Secretariat for Cluster Analysis. The assessment of the cluster organization is carried out by independent cluster experts who have received special training.

Continued table 2.10

1	2
10. European cluster platform for joint work between business and cluster representatives. (European Cluster Collaboration Platform, 2010).	Facilitates cooperation of clusters in the EU and on the international market. The key goals are the internationalization of small and medium-sized enterprises, the organization of activities to find potential partners for transnational cooperation and the exchange of knowledge, the launch of new dynamic memorandums between the European Commission and third world countries on cluster cooperation, support for the key growth of the European business sector and competitiveness, ensuring synergy with other European cluster initiatives and programs.
11. Initiative "Cluster Policy for South-Eastern Europe" (Cluster PoliSEE, 2012).	The goal is to expand regional opportunities and promote cluster development in the development of personal smart specialization strategies. The initiative is aimed at defining, developing and implementing a regional cluster policy by pooling resources and integrating activities in the global value chain, coordinating regional competitive advantages from international synergies.
12. A pioneering initiative for new growth through smart specialization (The Vanguard Initiative for New Growth through Smart Specialisation, 2013).	A strong regional network consisting of political leaders and ministries. The main goal is to use smart specialization as a principle of coordination in the selection of European priority regions in order to stimulate joint entrepreneurial opportunities.
13. "Regions of Knowledge" initiative, (2013).	This initiative, as part of the 7th Framework Program of the EU for research and development, promotes the development of network cooperation at the pan-European level between innovation clusters, which include local authorities, enterprises and research centers. The purpose of this initiative was to strengthen the scientific potential and competitiveness of EU regions by implementing economic development strategies based on scientific research, especially by supporting transnational cooperation networks of regional innovation clusters.

Continued table 2.10

1	2
14. Strategy "Clusters and smart specialization", (2013).	This tool is focused on political support and attraction of investments in clusters, encouraging stakeholders to participate in the development of clusters, conducting monitoring and research in the development of innovative clusters.
15. Initiative "Technological infrastructure for key promising technologies" (KETs Technology Infrastructures, 2014).	Launched by the European Commission to stimulate innovation among small and medium-sized enterprises by identifying key promising technologies (KETs) and improving their collaboration. The initiative helps to transform the identified technological prospects of enterprises into an innovative competitive product.
16. Cluster facilitated projects for new industrial value chains, (2015).	The task of such projects is to develop new inter-industry chains of industrial importance throughout the EU, based on the use of the innovative potential of small and medium-sized businesses.

One of the tasks of implementing bioeconomy achievements in European countries is the creation of special bioeconomy strategies at the state level and supporting strategic documents. At the same time, the growing asymmetry of innovative and biotechnological development of countries can be reduced by using such principles as: reuse of resources and materials; decarbonization of the economy (solving the problem of reducing the carbon intensity of GDP) using bioprocessing systems (agriculture and forestry) in the production process; promoting the development of regions (rural and coastal); risk management (reasonable use of technologies and their management) to prevent harm to the population and the environment; availability and openness to use of goods and services.

Eight countries have already created a special bioeconomy strategy - Germany, Finland, Italy, Spain, France, Ireland, Latvia and Norway, which focus on the priority areas of bioeconomy development specific to these countries. Thus, most EU countries focus on research and innovation strategies that are close to the bioeconomy or its development in certain industries. Some countries do not have any specific strategic programs or policies for the development of their national bioeconomies (Greece, Cyprus, Malta). There are countries that are in the early stages and continue

to have discussions about creating strategies, namely negotiations between government officials, politicians and potential investors.

The most acute problems of the development of high-tech clusters based on biotechnology are the minimal funding by the state and the attraction of business investors who could bring this sector to a new level. In recent years, biotechnology has not reached the stage of maturity and the possibility of entering the European innovation market in the "new" EU countries. An example to follow is the experience of Poland, Hungary, and the Czech Republic, which are leaders in the development of the biotechnology sector among the "new" EU countries. These countries were able to stimulate this sector, develop programs to attract investors and launch a mechanism for the formation of biotechnological clusters.

The analysis of tools for supporting the development of clusters and their formation in the countries of South-Eastern Europe, such as Poland, Hungary and the Czech Republic, shows that the innovative development path of Ukraine should be oriented towards the application of clustering approaches to solving economic problems. The process of creation and development of domestic specialized biotechnological clusters, the transfer of European biotechnologies will contribute to the development of such a model of clusters, which provides for the diverse nature of the combination of its elements with different types of relationships. Such a polystructural model will be based on a combination of the principles of complementarity, collaboration, mobility, sectoral diversification and synergism; and taking into account the real conditions of doing business, will contribute to the implementation of European production systems, the establishment of effective partnership relations between Ukrainian and European companies, bypassing the mechanism of blocking the excess export of domestic agricultural products with minimal added value at a low scientific intensity.

Theory and practice show that in the conditions of globalization of world economic relations, the integration of ecologically oriented enterprises and the formation of specialized bioclusters, as an organizational form of their effective functioning, become reasonable strategies for the development of the bioeconomy. Clusters, in particular small and medium-sized enterprises in the field of bioeconomy, can be formed on the basis of self-organization as a result of natural integration and cooperation in the production of ecological products or with the help of strategic planning carried out by regional or branch management bodies (Fig. 2.7).

The methodological foundations of the implementation of the biocluster strategy include the following stages: approval of regulations, strategies and programs; signing of contracts, agreements and contracts by the participants; training and retraining of enterprise personnel; implementation of communication projects and interaction technologies;

making corrections to documents; coordination of biocluster activities and participants; monitoring and evaluation of the efficiency and effectiveness of the functioning of the biocluster and of each participant; formation of measures to adjust activity and interaction (Kashchena, 2022).

Agricultural enterprises, as potential participants of the biocluster, often offer similar or related types of ecological products and services and are competitors in the markets, and self-organization of enterprises in this case is mainly carried out at the initiative of the leading enterprise. A difficult aspect of creating a biocluster at the initial stage is reaching an agreement between entrepreneurs on the formation of assets and strategies. The unifying factors of the economic interests of the creation of a biocluster are the agreements on the implementation of a single price policy on the market of ecological products, the expansion of the scope of provision of eco-services by its participants, the conduct of a single marketing policy, the joint planning of the introduction of innovative technologies, that is, the synergistic interaction of elements of a certain system of enterp rises.

For the formation of regional or sectoral bioclusters, appropriate conditions must be created, primarily of an organizational and economic nature. The results of the study indicate that such conditions are gradually being created in terms of increased competitive dependence between participants in the biotechnology market, the presence of a single infrastructure, and the need to expand the range of ecological products. Preparatory work for the creation of clusters requires both strategic management from the coordination center and coordinated activity and management from each enterprise.

During the performance of their functions, these structures form a single regional or branch (network) database, work out the methodological basis of bioclustering, develop provisions on the biocluster, basic economic standards, assess the development potential, options and forms of contractual relations within the cluster, prepare a selection of innovative priorities and projects , determine personnel policy, guidelines for strategic planning (Nesterenko, 2022).

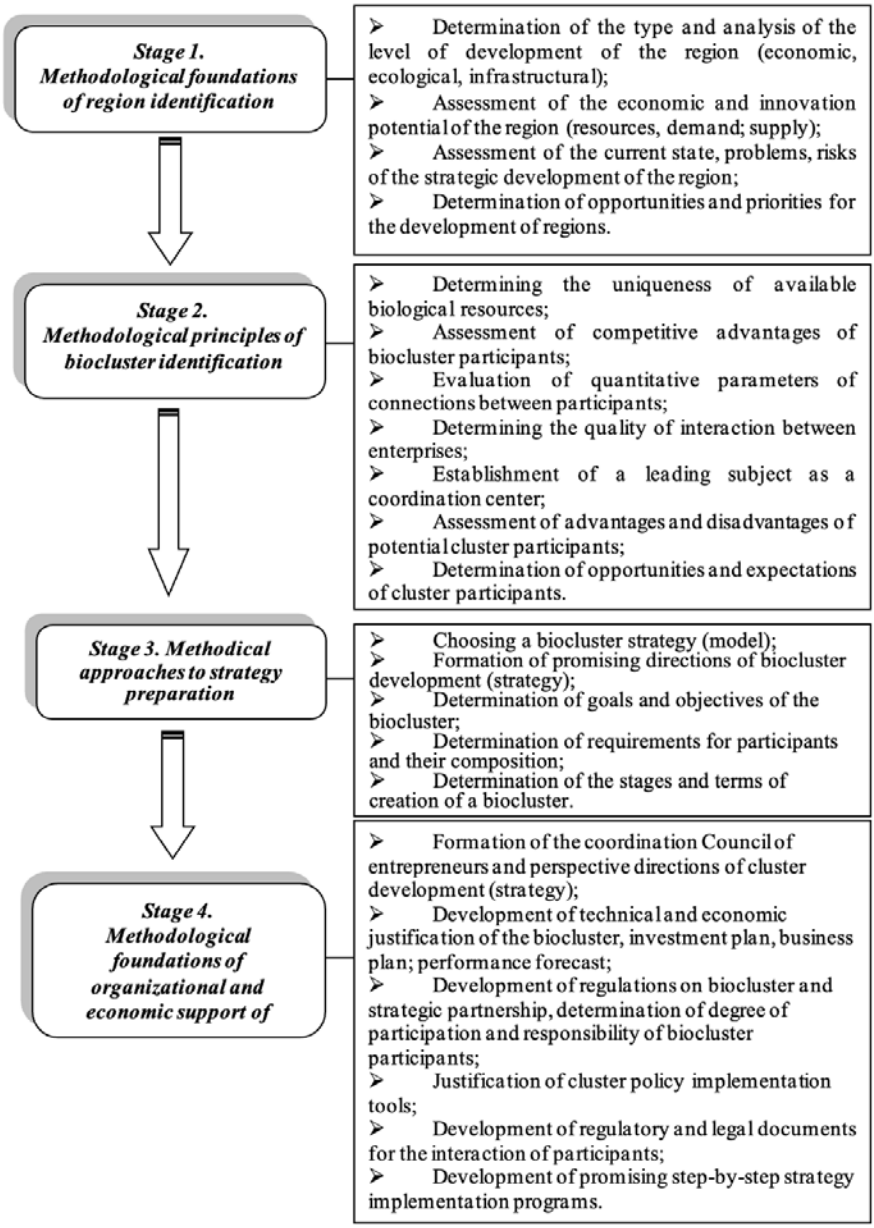

Figure 2.7 – Formation of the strategy of innovative bioclusters

Thus, the implementation of the experience of the EU countries is possible only with an amendment to the national mentality, territorial location and position of Ukraine in the international division of labor and specific markets of goods and services. Under these conditions, the starting conditions of sustainable development are the provision of: economic development supported on the basis of a modified market system; natural and ecological sustainability; close international cooperation and cooperation to achieve the goals of sustainable development; sustainable social development based on the principle of justice.

In Ukraine, an integrated approach to environmental management has not yet been implemented due to the lack of an appropriate legislative and regulatory framework. At the same time, Ukraine is interested in developing further cooperation in the field of environmental protection in the following areas: - global climate change; - management of water resources, in particular the Black Sea; - renewable energy and energy efficiency. The application of European experience in the field of socio-economic development of Ukraine is possible in terms of the pace and quality of the implementation of the strategic goals of sustainable development. The list of the main indicators of the strategy (economic development, social development, protection of the natural environment and rational use of natural resources) should be distributed and take into account: the ecological balance of production in the basic branches of industry, agriculture, the production of consumer goods and the provision of services, housing and utilities, transport , military activity; environmental expertise in the field of scientific support, environmental education, civil society, regional policy, international cooperation.

An additional effect of the transfer of European biotechnologies will be further research and production collaboration (growth occurs due to the strengthening of the synergy effect), financing of innovative development of selective fields, high technological efficiency of related sectors of the national economy, and the involvement of domestic scientists in European grant instruments (Horizon 2020, etc.). For this, it is necessary to use both the accumulated experience of European clusters and new developments. Synergistic approaches to the development of regions and scientific and technical directions will strengthen the possibilities of implementing scientific and technical developments and, ultimately, will contribute to the development of the economy of Ukraine.

2.4. Environmental security of Ukraine: integrative aspect

Security is one of the main values, and goals of individuals, communities of people, business entities, and the state. Safety should be considered in various dimensions, including, in particular, the environmental dimension. Until recently, this dimension was considered unimportant, but now its understanding is changing significantly. The importance and value of the natural environment are growing as a field that affects vital national issues. Today, the number one problem is the depletion of natural resources as a result of their inharmonious use and the lack of formed reserves of natural resources, which are exacerbated by inefficient management and the negative impact of climate change (Yatsenyo, 2022). The issue of the deterioration of natural resources and their ability to self-renew due to environmental pollution is attracting more and more attention. Already now, it is necessary to change one's attitude to the implementation of activities, whether they are the activities of an individual, enterprise, or state. Further development is possible only under the condition of changing people's attitudes towards nature and its resources. This requires behaviour and lifestyle changes and increased environmental awareness.

Environmental safety is now perceived not only through the prism of human safety, but also through the impact on the environment of the actions of people, enterprises, and the state. Therefore, it is necessary to take measures aimed at increasing environmental awareness as specific knowledge about the exploitation, threats and protection of the environment, as well as about the rules and tools for managing its resources. Under such conditions, the development of modern market relations between an enterprise and an organisation is prone to consolidated external and internal influences of constructive and destructive factors that significantly affect the results of their economic activity, and therefore their economic security. Based on this, when developing business strategies, it is important to ensure the safe and sustainable development of not only the objects of market relations, but also the protection of the environment from the harmful effects of the technologies used and the products produced (Zhalilo, 2001).

The Law of Ukraine "On Protection of the Natural Environment" (Article 50) defines environmental safety as a state of the natural environment, that ensures the prevention of the deterioration of the ecological situation and the occurrence of dangers to human health.

Environmental safety is guaranteed to citizens of Ukraine by implementing a wide range of interrelated environmental, political, economic, technical, organisational, state-legal, and other measures (Law of Ukraine, 2022). As one could see, the definition of the concept of economic security at the legislative level is considered through the prism of harm to a person. But in modern conditions, it is necessary to pay attention to the impact that activities can have on the environment and, based on this, determine responsibility for the damage caused.

Environmental safety issues in Ukraine are receiving more and more attention, but not to the extent that it deserves. Environmental threats and challenges that faced Ukraine until February 24 did not resolve themselves, but only deepened. The war had a global impact on the state of Ukraine's environment. Military conflict is not local when it comes to the environment. Ecosystems cannot be divided by conventional boundaries. If the natural balance in one geolocation is destroyed, it will definitely be felt by another (Strilets, 2022).

As a result, the reduction and deterioration of the state of natural ecosystems, chemical and industrial pollution, and the mining of territories have caused devastating damage to biodiversity.

In connection with the presence of real ecological danger for the environment, the state, business entities, life and health of people due to the action of many threats of natural, man-made, and socio-political factors, more and more attention is paid to environmental safety. Therefore, the issue of environmental safety at the current stage of economic development and realisation of the prospects of European integration in Ukraine has now gained special relevance and importance.

It should also be taken into account that recently more and more concern has been caused by issues related to the effectiveness of ensuring environmental safety. And this happens not only at the level of scientists, public organisations, and individual interested institutions, but at the highest level, the state level, which is mainly embodied in interstate, consolidated, legally significant decisions with the formation of relevant financial funds (Gulak, 2016).

Despite the fact that the issue of threats and ensuring economic security is actively discussed by politicians, scientists, and practitioners of various spheres of social activity, not all aspects in this area are sufficiently covered. They can reasonably be attributed to the issue of determining the factors of countering threats to ecological security, as well as the formation

of measures to reduce their negative impact, taking into account the geopolitical nature.

Ensuring national security is the foundation of self-preservation of national self-identity in general and the preservation of the Ukrainian people in particular. Among the main structural elements of the national security system, the following are distinguished: state-political, socio-economic, national-cultural, ecological, information (Pihotsky, 2022).

Natural disasters, as well as disasters caused by human activity, can and do pose a serious threat to the security of the state. Rapid growth of pollution, degradation of various ecosystems by pollutants that are produced in each country and penetrate from abroad, negatively affect the quality of life of people, worsen their health and pose a threat to the biological survival of residents. If we take into account the depletion of non-renewable resources, the problem of environmental degradation becomes global and becomes a source of unacceptable inequality between people. The narrowing of a person's living space can lead to "ecological" migrations, and therefore, complicate the international and domestic situation of individual countries, increase their sensitivity to threats of various nature (economic, social, political). In extreme cases, problems with access to natural resources and a clean environment can lead to violent rivalries and tensions. Thus, environmental pollution can create objective and subjective threats to national security.

As we can see, environmental problems also affect economic, political, social and other factors of state development. Therefore, the study of environmental safety issues is quite important.

So Varlamova I. notes that at the current stage, the understanding of the need to consider the concept of "ecological security" from the point of view of the triad "ecology-economy-society" is deepening, which indicates the ability to maintain balance on the basis of dynamic recovery and self-improvement, resist external and internal threats, challenges, and ensure acceptable levels of risk to the population's vital activities and sustainability of socio-economic development, as well as reproduction of natural and socio-economic potential (Varlamova, 2017).

In turn, Artyukh-Pasyuta O. and Milka A. propose to understand the ecological safety of enterprises (Artyukh-Pasyuta, 2022):

– firstly, the protection of the vital interests of the enterprise from real and potential environmental threats from the internal and external environment;

––secondly, it is a stable, balanced development of the enterprise under conditions of effective and efficient management, aimed at minimising the negative economic, ecological, and social consequences of its functioning as an element of the ecological and economic system, which is characterised by a steady reduction of damage to the environment, the state, and other business entities in the short and long term.

Therefore, environmental safety must be considered a component of national security, which includes the process of establishing a balance between ecological, economic and social directions, and ensuring the preservation of the environment, which positively affects people's livelihoods and the economic development of the state.

The following are among the reasons associated with the ecological emergency in Ukraine (Radchenko, 2022; Samosienko et al., 2020):

1) irresponsible attitude to their actions by both enterprise owners and civil servants, called to control the state and level of harmful emissions at work;

2) extensive industrial development and urbanisation, which increase the risk of emergency situations and outpace governments' capacity to develop infrastructure to deal with disasters, creating significant vulnerability and heavy dependence on international aid;

3) military (armed) conflicts that cause irreparable damage to nature;

4) insufficient development of safe technologies, ensuring production with the availability of resources used to reduce the probability of the occurrence of dramatic consequences of its operation, forecasting natural disasters and the concentration of means to eliminate their consequences, etc.

Even before the start of the Russian invasion in February 2022, according to the Environmental Efficiency Index, Ukraine ranked low in terms of air quality, biodiversity and ecosystem health (Strilets, 2022). Military aggression only deepened the problem. Today, the state of the environment in Ukraine causes concern, environmental problems have acquired a serious scale. Damages to the Ukrainian environment from the war exceeded $38 billion, as reported on December 7, 2022. said the Minister of Environmental Protection and Natural Resources of Ukraine Ruslan Strelets (Yankovskyi, 2022). Based on this, we can highlight the following directions that require increased attention and solutions:

First of all, these are CO2 emissions, which caused the average air temperature to rise by 1.5–2 degrees, which will have inevitable global consequences for the whole world. Active military operations contribute to

increasing CO2 emissions. Rocket launches, bombing and shelling, explosions, and fires all produce colossal emissions of CO2 into the atmosphere. CO2 emissions in Ukraine increased by 23% compared to 2021. And if earlier industrial enterprises and outdated motor vehicles were called the biggest sources, now we are talking about the consequences of the war. About 33 million tonnes of CO2 entered our atmosphere as a result of Russia's military aggression in Ukraine (Yalovy, 2022). Therefore, the increase in CO2 emissions will affect global warming. Forests suffer from fire. Currently, hostilities are taking place in the eastern and southern regions of Ukraine, which have low forest cover. Considering the fact that forests perform protective functions, their destruction and damage will affect the climate of these regions and may lead to significant erosion processes. In particular, in the south of Ukraine, the consequences may be wind erosion and desertification.

Secondly, atmospheric pollution. During the detonation of rockets and artillery shells, a number of chemical compounds are formed (carbon monoxide, carbon dioxide, formaldehyde, vapours of cyanic acid, etc.). All this leads to the pollution of rivers and lakes, which has a detrimental effect on aquatic inhabitants; forest degradation; soil deterioration; cancer diseases on the rise; and crop yields decreasing.

Thus, Oleksiy Vasylyuk, the head of the board of the Ukrainian Environmental Protection Group, explains that the fuel that gets into the soil and atmosphere has a harmful effect on the environment. Explosions have the same consequences, each of which is a chemical reaction in itself. "After the explosion, no less than half a kilo of sulphur remains from the Grad projectile, which falls into the soil. And with the contact of sulphur with water, all living things simply burn in sulfuric acid. And when it is said lyrically about the places of hostilities that there is scorched earth, it is really scorched—only not by flame but by acid", O. Vasylyuk emphasises (Opryshchenko, 2022). The release of a large amount of toxic substances into the atmosphere creates the threat of acid rain, which will have a negative impact on agriculture, the environment, and human health. At the same time, polluted air has no borders; emissions into the atmosphere are transferred and deposited on the territory of other states.

Thirdly, the destruction of man-made objects. Almost all branches of agriculture, along with the processing industry, were under attack. This applies not only to the economic, but also to the environmental problem. Chemical and metallurgical plants, oil depots, warehouses with hazardous waste, and nuclear power plants were in the zone of active hostilities. This

poses a real threat to the natural environment not only of Ukraine, but also of the whole world (Ministry of Environmental Protection, 2022). Thus, Severodonetsk had 346 chemical enterprises before the war, which were destroyed during the war, and stocks of poisonous substances got into the soil, water, and air. Examples of large-scale pollution include PJSC "Azovstal Metallurgical Combine", which was one of the largest polluters of the environment in Ukraine even before active military operations. After its destruction, a large amount of harmful substances entered the natural environment of the Sea of Azov, which contributed to the disruption of the natural balance. Russian troops attack infrastructure along the coast of the Black and Azov seas with ships at anchor, which leads to water pollution and the spread of toxins into the sea (Ministry of Environmental Protection, 2022).

Animal husbandry also suffered significant destruction. Even before 2022, in Ukraine and before the war, there was a problem with crematoria for animals, and there was a need for a systematic organisation of their disposal. It also affected one of the largest poultry farms in Europe. Due to the "blockade", the Chornobayivska poultry farm of the Ukrlandfarming Group, which is located in the Kherson region, was completely cut off, and production was stopped. More than 4 million adult chickens and about 700,000 young chickens died without the possibility of disposing of them (Malkov, 2022), which also had a negative impact on the environment.

Fourth, soil and groundwater pollution. The construction of military bases and the use of military vehicles damage the soil and destroy vegetation. Each projectile detonation or explosion results in the destruction of all animals, plants, and microorganisms in the radius of damage. Explosions with leakage of nitrogen or ammonia lead to the destruction of plants, pollute drinking water, and kill aquatic life. In general, due to the war, more than 4.6 million people in Ukraine have problems with accessing drinking water, and 1.4 million Ukrainians do not have access to safe drinking water at all (Ministry of Environmental Protection, 2022). More than 80,000 square kilometres of Ukraine are mined with anti-personnel and anti-tank weapons. Which poses a threat to both people and nature. According to the Ministry of Internal Affairs, demining requires at least 270,000 square metres (km) of the country's territory (Sakha D. et al., 2022). And this is not a one-year job; demining takes decades. In addition, abandoned explosive ammunition contains many toxic elements that quickly enter the natural circulation. All this endangers the use of land in agriculture. This is especially important for Ukraine,

where more than 40% of export revenues come from the sale of agricultural products. Today, almost 30% of the fields are not available for agricultural use, which makes it impossible to grow crops and economically restore the state.

Fifth, the state of protected areas. As a result of Russian aggression, more than 20 nature and biosphere reserves and national natural parks were affected. Today, 2.5 million hectares of Europe's nature protection network are under threat of destruction from the actions of the aggressor. As of March 1, 2022, the aggressor was conducting combat operations on the territory of 900 objects of the nature reserve fund with an area of 1.24 million hectares, which is about a third of the area of the nature reserve fund of Ukraine. About 200 territories of the Emerald Network with an area of 2.9 million hectares, are under threat of destruction. Seventeen Ramsar sites, with an area of 627.3 thousand hectares, are wetlands of international importance. In general, 20% of the area of all protected areas in Ukraine remains at risk (Ministry of Environmental Protection, 2022). According to the employees of the National Natural Park "Tuzlivski Lymani" due to the actions of Russian warships near the shores of Odesa, the facts of the death of dolphins are recorded (Ministry of Environmental Protection, 2022).

Consequently, as a result of the armed conflict, damage is caused to water supply and drainage systems and communications, which threatens emergency pollution of rivers that are sources of water for industrial and communal enterprises and the population. Restoration of water pipes and power lines in war zones is often delayed, and the quality of drinking water deteriorates dramatically during such periods. There is local (but significant in its consequences) pollution of underground and surface waters as a result of large-scale spills of oil products from exploded tanks, destroyed equipment, and other military actions.

Considering the above, we can say that there are many environmental problems in Ukraine, so we need to work with them every day. After the end of the war, the ecological situation in Ukraine will probably be worse. Currently, man-made ecological disasters are recorded throughout Ukraine, and the damage caused to the environment is part of the global environmental problem and will inevitably affect the global state of affairs. Environmental protection plays an important role these days. This is certainly a positive trend, that must be constantly strengthened to make it possible to maintain the proper state of the ecosystem in which we live. Also, it is necessary to emphasise that the reconstruction of Ukraine after the war will be carried out with the help of investors, but at the

expense of our materials, and this can also negatively affect the environment. Yes, we will need construction materials, which will lead to cutting down forests, ploughing new lands, and developing new quarries. The modern development of the economy requires the involvement of an increasing number of natural resources in economic turnover and leads to the depletion of natural complexes. Minimising the man-made load on the surrounding natural environment is of particular importance for industrial enterprises in the context of increasing volumes of mineral extraction and increasing production capacities. Since industrial production is inevitably associated with high risks of negative impacts on the ecosystem, up to catastrophic levels, it therefore requires effective environmental safety management. The restoration of Ukraine should not become a new destruction of the country.

Given the fact that environmental problems know no borders and acquire a geopolitical character. Therefore, it is necessary to solve them taking into account European integration. The state of nature is equally important for Ukrainians and citizens of EU countries, because it affects the quality of life of each of us. Ukraine has signed an Association Agreement with the EU, which is gradually bringing our living standards closer to European standards. To do this, we undertook to carry out a series of reforms in areas that concern Ukrainians today, namely water quality, air and waste management (Ministry of Environmental Protection, 2022).

Ukraine's integration into the pan-European space requires cooperation in the environmental sphere from a number of directions. The list of areas of cooperation is determined, on the one hand, by a systematic analysis of ecology itself, as a phenomenon of objective reality, and on the other hand, by a systematic analysis of legal relations, which includes, in addition to legal norms, such objective legal phenomena as the subject and object of legal regulation, legal technique, legal consciousness, and legal culture (Lazarenko, 2015). Therefore, the goal of cooperation between Ukraine and the EU should be to preserve, protect, improve, and reproduce the quality of the environment; protect public health; make prudent and rational use of natural resources; and encourage measures at the international level aimed at solving regional and global environmental problems.

At the conference in Lugano, Ukraine and Switzerland agreed on assistance in the implementation of climate projects for the recovery of Ukraine. After all, the reconstruction of Ukraine will require intensive use of various spheres: mining, industry, transport, and others, which will be

accompanied by an increase in carbon emissions into the atmosphere. There are plans to implement in Ukraine a national system of trading quotas for greenhouse gas emissions and to improve systems of monitoring, reporting and verification of emissions (Andrusevich, 2017).

Ukraine's international partners, especially the EU and the USA, have declared their readiness to provide substantial assistance in the post-war reconstruction of Ukraine. However, the country will need to create conditions for these investments.

It is expected that donors will coordinate their recovery efforts, and the Ukrainian authorities will transparently provide information about the funds received and improve accountability, involving society in decision-making and simplifying access to information (Sakha D. et al., 2022).

After Ukraine's victory in the war, Switzerland will invest in the implementation of Ukrainian public and private climate projects of "green" recovery. The relevant agreement was signed in Lugano, where the Conference on the Restoration of Ukraine is being held, Prime Minister of Ukraine Denys Shmyhal reported on Telegram (Pavlysh O., 2022).

On the one hand, joining the European Green Course is an opportunity to strengthen and diversify the process of decarbonization among the sectors of the economy, an incentive for Ukraine to develop mutually beneficial contacts with the EU, capable of unlocking the potential of the Ukrainian economy, and on the other hand, it is a step that involves the implementation of European climate standards and certification of production by domestic businesses. Here, the state needs to take care of the introduction of programs to support greening processes, and businesses need to take care of technological modernization. It is fundamentally important to introduce an ecosystem approach to the management activities of Ukrainian enterprises.

The post-war recovery of Ukraine should be based on the principles of the European Green Course and the use of advanced environmental tools. R. Strilets, Minister of Environmental Protection and Natural Resources of Ukraine, reported that the Ministry actively participated in the creation of the post-war recovery plan for Ukraine, in particular, the "Environmental security" section of the Plan for the Recovery of Ukraine in the War and Post-War Periods will include the following priority areas (Yatsenyo O., 2022; PAEU Working Group, 2022):

1. Reforming public administration in the field of environmental protection, which is related to the formation and implementation of policy, public administration and control in industries that are ineffective and do

not ensure the reduction of pollution and damage to the environment. For this, it is necessary to involve advanced Ukrainian and foreign scientists to develop innovative methods and approaches for the restoration of contaminated territories and their further application. It is also important to deliver correct environmental information to the population and to form an environmental culture among them.

2. Climate policy: prevention and adaptation to climate change. At this level, problems related to the high carbon intensity of the economy are considered. To eliminate it, it is proposed to implement an effective and consistent policy to reduce greenhouse gas emissions, coordinated with the climate goals of the EU. Also, the problem of low adaptive capacity and resilience of social, economic and ecological systems to climate change needs to be solved.

3. Environmental safety and effective waste management. In the framework of this direction, the issues of the critical state of environmental security in Ukraine, which are related to a significant amount of waste generated as a result of military operations and damage to waste management facilities, violations of logistical connections in the field of waste management, as well as a high level of industrial pollution, are being resolved in the absence of proper emission control.

4. Balanced use of natural resources in conditions of increased demand and limited opportunities, which considers the problems of depletion of natural resources due to their unsustainable use and the lack of formed reserves of natural resources, which are exacerbated by inefficient management and the negative impact on climate change. Also, the issue of the deterioration of the state of natural resources and their ability to self-recovery due to environmental pollution requires close attention. One of the tasks for solving this problem is the completion of the preparation of the Water Strategy of Ukraine, the introduction of changes to the national target program "Drinking water of Ukraine" for 2022-2026 with the aim of eliminating the consequences of military operations, as well as the preparation of various sectoral programs and plans.

5. Preservation of natural ecosystems and biological diversity. The main problematic issue is the insufficient share of nature conservation areas and their integration into a single network for sustainable development.

Conclusions. Thus, we are in a state of urgent need for Ukraine's integration into the European Union, which is rapidly increasing its development in the field of environmental protection by building bilateral and multilateral cooperation with EU member states and international

organisations. The integration of environmental policy into other policies is one of the key strategic ways of promoting balanced development, as such integration creates appropriate conditions for the coordination of environmental policy with sectoral policies, achieving coordination at different levels of decision-making and ensuring transparency and public participation in the formation and implementation of environmental policy .

Proposals on issues of environmental safety, conservation, biological and landscape diversity, reproduction and tireless use of natural resources, formation and implementation of an effective climate policy, waste management system, environmental monitoring, digital transformation, reforming of the nature protection industry, implementation of European directives are already being developed.

Therefore, close cooperation with international organisations shows that Ukraine is integrating into the European space, and during reconstruction we face difficult tasks not only with the restoration of the environment, but also with the implementation of European integration reforms and the implementation of climate change policy.

2.5. Green business strategy in the European integration context

The development of environmentally oriented business can significantly change the environmental situation in Ukraine, improve environmental protection and the use of natural resources. Obviously, it is impossible to solve environmental problems and achieve sustainable development without a general improvement in the country's economic situation and effective macroeconomic policy.

The deterioration of the environmental situation in Ukraine is influenced by a number of economic and legal factors operating in different areas, at different levels and with different scales of impact.

In today's world, more and more people are concerned about healthy lifestyles. This includes, among other things, such an element as the consumption of quality food. Organic products are one of the main components of quality nutrition. That is why, over the past 10-15 years, the market for these products has been growing rapidly in developed countries. These trends have also appeared in Ukraine today, although on a much smaller scale. At the same time, Ukraine's European choice should extend the principles of work and lifestyle to various spheres of our society. This also applies to compliance with appropriate nutritional standards.

Unfortunately, today the vast majority of the Ukrainian population cannot afford this due to financial constraints. This is due to the fact that the price of organic products differs significantly from the price of conventional products. This makes it unaffordable for people not only with low but also with middle income. This is one of the major obstacles to the development of the organic market in Ukraine. However, even so, the prospects for this market are quite optimistic. Based on this, it was decided to analyze the main trends in the development of environmentally oriented business in Ukraine and certain regions of the world.

In 2021, organic agriculture was licensed in 183 countries, and approximately 2,4 million farmers were engaged in the production of organic products (The World of Organic Agriculture, 2019).

It should be borne in mind that over the past twenty years, there has been a virtual "explosion" in the production of organic products in the world. If in 2001, 200 thousand farmers were engaged in organic production in the world on an area of 11 million hectares, in 2008 there were already 1,4 million of them and the area of land under their cultivation reached 34,5 million hectares (Буга, 2017).

The largest area of land under organic production as of 2021 was in Australia (35,6 million hectares), Argentina (3.4 million hectares), and China (3 million hectares). The largest number of organic enterprises was in India (835 thousand), Uganda (210,3 thousand) and Mexico (210 thousand) (Statistics and Emerging Trends, 2021). According to the research of the Research Institute of Organic Agriculture (Forschungsinstitut fur biologischen Landbau, FiBL), organic production has been spreading rapidly in the world.

In Europe, the area of organic land in the region has increased tenfold over the past decade. The area of organic farmland is growing at a slower pace in those countries where this process began relatively long ago (Germany, the Netherlands and France).

The undisputed world leader according to this indicator was Liechtenstein – 37.9% and Austria – 24% of agricultural land is organic. The weakest organic agriculture develops in Iceland, Ireland and Malta, where it accounts for less than 1% (Новак, 2016).

The area of organic non-agricultural land (mostly wild) was equal to 37.6 million hectares in 2020 compared to 4.1 million hectares in 2001. Finland (9.1 million ha), Zambia (6.8 million ha) and India (4 million ha) had the largest area in this segment. Thus, the total amount of land used for organic production in the world is 81.3 million hectares as of 2016. Some

countries of Eastern Europe, including member of the CIS (Latvia, Lithuania, Estonia) were among the leaders in terms of the share of organic agricultural land from all agricultural land, overtaking the countries of Western Europe (Мінькова, 2016).

Argentina, Spain, China, the USA, and Kazakhstan show a high increase in area. In the USA (as well as in Canada, Japan, Australia and other developed countries), the legislation in the field of organic agriculture is generally identical to the European one. Back in 2003, the US Department of Agriculture distinguished three categories of farms: commercial, intermediate, and residential (farms of rural residents for whom their farms are not the main source of income).

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The dynamics of the processes that characterize the development of the organic market are studied. This problem has not been studied yet, especially in Ukraine. Understanding these processes will make it possible to predict future events.

Assessment of the main trends in the development of ecologically oriented business in Ukraine and in certain regions of the world. Assessment of the main trends in the development of ecologically oriented business in Ukraine and in certain regions of the world.

The total organic market was $97 billion in 2021, up from $15.2 billion in 2003. Among individual countries, the leaders were: the USA ($45.2 billion), Germany ($11.3 billion; France ($8.9 billion). Per capita, the most organic products were consumed in Switzerland ($325), Denmark (€315) and Sweden ($268).

Dynamic retail market: The EU market for organic products is growing and grew by 7.4% in 2016. This is exceptional considering the average annual growth rate (2008-2013) in food retail markets around 2% to 3 %.Organic eggs have a market share of 11-22% in Austria, Belgium, Finland, France, Germany and the Netherlands, dairy products hold a market share of 5 to 10% in Austria, Germany and the Netherlands. Milk

alone can reach an even higher share – 15.7 % in Austria (Organic in Europe. prospects and developments, 2016).

Table 2.11 – Sown area of organic products in the world (certain regions) in 2019-2021 thousand ha

Region	2019	2020	2021	2021 in % to 2019
Africa	1801.7	2056.6	1984.1	243.4
Asia	4897.8	6116.8	6537.2	209.6
Europe	13535.2	14558.2	15635.5	187.2
Latin America	7479.3	8000.9	8008.6	111.2
North America	3130.3	3223.1	3335	126.6
Oceania	27347	35894.4	35999.4	358.5
The world as a whole	58187	69845.2	71494.7	226.1

Thus, it is Australia today that is the world leader in organic production. In addition, it should be noted that over the past ten years, the area under organic production has grown significantly in Africa (+143,4 %) and Asia (+209,6 %). However, at the same time, one cannot fail to pay attention to the fact that the total area of land in Africa in 2018 was approximately equal to 2 million hectares. This is much less than in other countries of the world.

Regarding the market of organic products in individual countries of the world, in this case, four countries should be singled out by market volume: the USA (40.6 billion euros), Germany (10,9 billion euros), France (9.1 billion euros), China (8,1 billion euros). These countries account for approximately 2/3 of the global market for organic products. In 2021, the consumption of organic products in Ukraine was estimated at 33 million euros. with exports of 104 million euros.

If we look at the situation from the point of view of the volume of production of organic products per inhabitant, then in this case the world leaders are Denmark (312 euros), Switzerland (311 euros), Sweden (231 euros) and Luxembourg (221 euros). In Ukraine, this figure is less than one euro per inhabitant. This is about six times less than in China and Greece. All this, in turn, is evidence of the actual absence of a real market for organic products in Ukraine.

Table 2.12 – The largest markets for organic products per capita in 2021

Country	Market volume, million euros	Country	Production per inhabitant, euro
USA	40559	Denmark	312
Germany	10910	Switzerland	311
France	9139	Sweden	231
China	8087	Luxembourg	221
Italy	3483	Austria	205
Canada	3119	France	136
Switzerland	2655	Germany	132
Great Britain	2537	USA	125
Sweden	2301	Saudi Arabia	93
Spain	1903	Canada	84
Ukraine:		Ukraine	0.74
consumption	33		
export	104		

The structure of the market for organic products in individual European countries is shown in table 2.13. First of all, it should be noted that the structure of this market in each country has its own characteristics. In particular, in Norway, a significant share belongs to baby food products, and in Germany, the production of organic bread and bakery products is widespread. It should also be noted that the most common types of products are eggs and dairy products (FiBL Statistics, 2021). If we consider the dynamics of changes in organic production in European countries, then in this case we wanted to start with the assessment of cultivated areas. During the period 1987-2021, it increased from 0,1 million hectares to 15.6 million hectares. Including for the period 2010-2020 – from 8.3 million hectares to, respectively, 15.6 million hectares, or almost twice.

The organic market in European countries, which is even more impressive. Over the period from 2007 to 2020, it grew in absolute terms from 11,9 billion euros to 40,7 billion euros, that is, almost 3,5 times.

The average growth rate of the market was 636 million euros per year. The fact that even in the crisis years (2010) the organic market continued to grow is also important. This trend should be maintained in the near future.

Table 2.13 – Market of organic products in certain countries of the world, 2021 (%)

Product	Austria	Germany	France	Norway	Switzerland
Baby food Baby food			12.7	33.1	
Drinks			0.5	0.6	3.3
Bread and bakery products		8	3.4	1.9	4.9
Eggs	21.6	21	29.6	8.7	26.6
Fish and fish products			2.5	0.8	
Fresh vegetables	15.3	9.7	6.3	4.5	23.1
Fruits	10.9	7.8	7.7	2.3	13.9
Vegetables and fruits			6.9		16.9
Meat and meat products	4.5	2.5	2.4	0.5	5.6
Milk and dairy products:					
- butter	10.6	4.5	5.6	3.1	
- cheese	9.6	4.7	1.6	0.7	6.7
-milk	18.5	12.1	12.7	4	16.7
- yogurt	13.9	8.1	6.9	0.7	

If we turn to the data on the area of agricultural land in Ukraine for 2005-2021, then high rates of growth should be noted. According to the data of the "Federation of the Organic Movement of Ukraine" website, during the analyzed period, the area under organic farming increased from 164.4 thousand hectares in 2003 to 420 hectares in 2018. However, in 2019, it decreased to 3091, thousand ha. At the same time, the number of enterprises increased from 31 to 510. The figure also shows that the number of enterprises increased gradually, at the same time as the area of agricultural land controlled by them increased rapidly, first in 2005 and then again in 2015.

Thus, the dynamics of organic production in Ukraine as a whole is characterized as positive, although the decrease in 2021 of the area occupied by organic crops causes concern (Gerasimenko, 2020).

The market of organic products has been developing rapidly in the world in recent decades. The area under organic farming was 71.5 million hectares in 2020, compared to 11 million hectares in 2000. Liechtenstein is the leader among European countries in terms of the specific weight of organic agriculture. In this country, the share of organic farming in 2019

was at the level of 38.5 %. In second place was Austria – 24.7%, in third – Sweden – 20 % (Shyian, 2021).

Table 2.14 – The area of organic crops and the number of farms growing organic crops in Ukraine, 2005-2021

Years	Area, thousand ha	Number of farms
2005	164.4	31
2006	239.5	69
2007	240	70
2008	242	72
2009	242	80
2010	249.9	92
2011	270	118
2012	270.2	121
2013	270.2	142
2014	270.3	155
2015	272.9	164
2016	393.4	175
2017	400.8	182
2018	410.6	210
2019	411.2	360
2020	420	375
2021	309.1	501

The volume of the European market of organic products in 2020 was equal to 40.7 billion euros, of which 37.4 billion euros belonged to the countries of the European Union. The development of the field of organic animal husbandry is inferior to crop production. This is caused primarily by the much more complex technological features of the transition to the production of organic products (Koshkalda, 2021). Among the groups of animals, the largest specific weight in the European Union countries in the structure of organic production belongs to cattle (5.2%). Further, the following groups of animals were located according to the specific weight of organic production: sheep (5%), and poultry (3.3%) and pigs (0.7%).

In Ukraine, the first steps towards the production of organic products in Ukraine began in the 1992s. According to FIBL and IFOAM data, in 2015, our country was among the top ten countries in the world with the largest increase in the area of organic land. In the domestic market, the consumption of organic products increased thirteen times between 2012 and 2020: in 2012, the consumption was at the level of about 2,5 million

euros, in 2016 - the amount exceeded 5 million euros, and in 2020 already 33 million euros. In 2020, Ukraine ranked 20th in the world in terms of organic food production. Products worth 137 million euros were produced, of which products worth 104 million euros were exported.

Thus, the conducted analysis makes it possible to state the following. Firstly, the market of organic products in Ukraine developed rapidly during 2004-2020. Secondly, the fact that even during the crisis years (2010) the organic market continued to grow is also important. Thirdly, the further development of the market of organic products is possible only if the income level of the population increases and the state supports producers.

2.6. Waste recycling system: European experience and its implementation in Ukraine[1]

Recycling is an effective method in the fight against waste and its secondary processing, which is beneficial from the point of economic and ecological components view. Statistical data on the waste processing high level in leading countries confirms the already stable relevance and popularity of this direction for a long time. According to available statistical data, more than 40% of waste is recycled in most European countries. Whereas in Ukraine – about 7%. The article analyzes the main types of sorted waste that can be used as raw materials for secondary processing, and based on the research data of Yale University, the main European countries that are currently leaders in secondary processing are identified. The analysis schedule of the waste processing system in Europe is given. Analysis of European countries showed that Switzerland, which is the "greenest" country according to most data and indicators, can be considered a model. Based on these statements, several key components of the waste management system in Switzerland were analyzed, the participation and influence of state and regional authorities on the activities of communities for waste collection and disposal were analyzed, and examples of the control system for the implementation of these processes were also studied. The work highlights the most important components of

[1] This research was funded by the Ministry of Education and Science of Ukraine, “Post-War Recovery of the Ukrainian Energy Industry: Waste Management Optimisation Considering Public Health, Environmental, Investment and Tax Determinants” – grant 0123U100112

the recycling successful implementation in the country and developed recommendations for transferring experience to the current situation in Ukraine in order to solve problems with raw materials and increase responsibility for waste. These recommendations are focused not only on aspects of improving the overall waste management system but also on the principles of customer-oriented marketing, where waste is a raw material for businesses engaged in entrepreneurial activities in the field of secondary processing. Based on the experience of the studied countries, it is also proposed to implement in Ukraine the effective components of the waste management system proven by practice, such as the development of a convenient navigation system for citizens, which will help to easily learn how to sort, what conditions and rules, where to find a collection point for certain waste. (based on the example of the existing waste management system in Switzerland). The data obtained in the work can be useful both for scientists and for those who work in fields related to recycling, waste management or waste management, community development, or enterprises that benefit them.

In this work, we want to raise the topic of waste processing, which is an actual solution to many problems with environmental pollution and an opportunity for more efficient use of resources. In other words, it is a resource that can be used to make the world much better and more perfect, because the rational and responsible use of natural and human resources is important both for the environment and for humanity. This topic has been heard for many years, but it is already being implemented in many countries. European countries are no exception, because according to statistical data, on average, European countries recycle about 46% of waste. Ukraine is only looking for and developing the way to such indicators. Accordingly, it is useful to understand what is the secret of success of leading countries and how to adopt successful experience to Ukraine. According to the available data, there are facilities, i.e. enterprises, for the processing of the main types of waste in Ukraine. However, they import raw materials from European countries (Poland and others), where the garbage has already been properly sorted. High-quality management of raw materials for secondary processing is something that is lacking in Ukraine, because it is an important element that has a double benefit: firstly, qualitatively sorted waste is processed and does not harm the environment in landfills, and secondly, it becomes raw materials for recycling enterprises in Ukraine that are ready to buy sorted waste. Accordingly,

provided the process is properly organized, recycling is a profitable method for ecologically solving waste problems.

The work is aimed at the systematization of knowledge about recycling and its status in Europe. The task of the work is to understand the key aspects of the successful experience of developed countries and the possibility of transferring the experience and its implementation in Ukraine.

In the process of work, analytical and logical methods were used. Found statistical data on recycling in European countries from various universities and organizations. The countries with the best data were selected, and the actual data regarding the waste management situation in the country was reviewed. A country was selected that can be used as an example of successful implementation, and its experience was analyzed. Data collection and analysis of the situation with secondary processing in Ukraine was carried out. Recommendations for the development and improvement of secondary processing in Ukraine have been developed in relation to the analyzed data.

What is recycling? To begin with, let's understand the definition of recycling (secondary processing), which materials are subject to it, and what can be obtained from them as a result. Here's what sources say:

Recycling or рециклинг ("recycling") literally translated from English is "repeated cycle". Most often, recycling is confused with upcycling, in which objects are only slightly modified and receive a new functionality. Recycling refers to the complete processing of raw materials in order to create new items.

This requires special equipment and special technologies. But, everyone can take part in the recycling process, be an active supplier of raw materials and start sorting it at home right now (Tsala-Mbala et al., 2022).

What is recyclable? Recyclable materials are listed in Table 2.15 below.

What will we get as a result of processing? Next, we consider it appropriate to consider in more detail: why it is important to recycle and what can be obtained as a result of processing each type of raw material.

Wastepaper. Why is it important to recycle paper? Using recycled paper helps reduce deforestation. For example, 100 kg of waste paper saves one tree. In addition, 20,000 liters are needed for processing. water and 1000 kW of electricity less than for the production of new paper, which, by the way, can survive about four to five recycling cycles.

Table 2.15 – Materials subject to processing

Type of raw material	Subspecies
Wastepaper	Paper; Cardboard; Newspapers
Glass	Sklotara; glass breaker
Scrap metal	Black; Non-ferrous; Precious
Chemicals	Acids; Meadows; Organic
Oil products	Olives; Bitumen; Asphalt
Electronics	Ware; Payments; Accumulators; Mercury lamps; Wire
Plastics	PET; PVC; PVD; ABS; PS; PND
Textile	Textile
Rubber	Tires; Rubber
Biological	Food waste; Fats; Sanitation
Wood	Knots; Shavings; Leaf
Construction	Brick; Concrete
Sewage	Industrial; Household; Special
Combined material	TetraPak

What is made from recycled paper:

• New office paper, which does not differ in appearance from paper made from primary raw materials

• Ekovatu

• Trays for eggs

• Excellent quality toilet paper

• Napkins

• Cotton pads

• Disposable pots for seedlings

• Disposable dishes

• Packaging cardboard

By the way, cardboard is recognized as the most popular packaging material that can be recycled multiple times (Cook et. al., 2021).

Glass. Why is it important to recycle glass? When processing glass, a lot of natural resources are saved. Huge areas of land that could turn into landfills are also preserved. In addition to handing over for recycling, it is also possible to simply hand over glass containers. The difference is that cans and bottles are simply washed, disinfected and reused. During processing, glass is crushed, and then a glass mass is created from which new products are made. The first option is more ecological and requires less energy consumption.

What is made of recycled glass? In addition to new bottles and cans, water filters, beads and various construction materials are made from glass (Islam et al., 2017).:

• Highly porous foam glass
• Silicate glue
• Types of concrete
• Ceramic sanitary ware
• Tile
• Mastic and paint materials.

Scrap metal Why is it important to recycle metal? The use of recycled materials helps to significantly reduce electricity consumption, and the need to use natural resources also disappears. In addition, when processing aluminum, the emission of greenhouse gases is reduced by 95%, compared to the production of new aluminum, which is subject to repeated processing, in which its physical and mechanical properties are not lost.

What is made from recycled meta l(Srinivas Sasikanth, 2022):

• New banks
• Materials used in automotive, aircraft and aerospace industries
• Fastening for furniture
• Building materials
• Aluminum composite panels for cladding buildings.

Plastics. Why is it important to recycle plastic? Since the beginning of the 1950s, about 8.3 billion tons of plastic have been produced in the world. About 60% of them became garbage and went to landfills or simply ended up in the environment. All this causes irreparable damage to our planet and all its inhabitants. The list of the most common plastic waste includes plastic bottles and their caps, food packaging film, polyethylene bags, as well as straws and stirrers. All these items can be discarded today, replacing them with reusable alternatives. When handing in plastic, it should be noted that not all types of plastic are recyclable. For example, with marking 3, 7 and some composite materials (which consist of several components and have the sign "C/") cannot be recycled.

What is made from recycled plastic:

• The latest eco trend is the production of clothes from recycled plastic. The North Face, GANT and Nike actively use this material in their collections.

• Sleepers made of composite material of special strength, which includes recycled plastic

• "Lying" policemen

• Building materials: roof tiles and paving slabs
• Office hole punches
• Sintepon
• Ropes
• Carpet
• Components for the automotive industry
• Sports equipment
• Trash cans
• Packages and packaging materials
• Plastic furniture
• Textiles.

Textile. Why is it important to recycle textiles? Once in a landfill, textiles will take hundreds of years to decompose. At the same time, methane and CO2 will be released into the atmosphere. Recycling clothes can reduce the damage caused to the environment. This is comparable to removing 1.3 million cars from the road (US Environmental Protection Agency (EPA)). Approximately 20% of all pollution in the World Ocean is caused by textiles. In Hong Kong alone, 253 tons of textiles go to landfill every year (Global Fashion Agenda).

What is made from recycled textiles:

• Building materials: wool and wadding for insulation and insulation, wallpaper glue, additives to building mixtures
• External material for production of upholstered furniture
• Home shoes (Walter Leal Filho, et. all., 2019).

Rubber. Why is tire recycling important? To increase the wear resistance and elasticity of tires, manufacturers often add special components to their composition. Due to this, the decomposition of tires will increase by a hundred years, and during all this time, harmful substances are released into the atmosphere. And in case of ignition of tires, the concentration of such substances increases many times! Tires are hazardous waste and must be disposed of properly. During recycling, tires are turned into crumb rubber, which is then used to make many valuable items.

What is made of recycled tires (Akbas & Yuhana, 2021):

• "Soft coverings" for sports and children's playgrounds
• Additives for construction solutions, new tires, mats, soles
• Asphalt bitumen filler.

Combined material. A distinctive feature of Tetra pak packaging is that it is multi-component. It has 3 components: cellulose, polyethylene and

aluminum. That is why 3 times more resources are needed to produce a Tetrapak than for monopacks. During processing, cellulose fiber is first extracted. After that, the Tetrapak packaging leaves polyester and aluminum waste, which is called polyaluminum. This mixture is purified and granulated. After that, it can be used to make new things.

What do and recycled Tetra pak:

• Same products as recycled paper

• Cases for ballpoint pens, which can also be recycled (approximately 1 liter Tetra Pak makes 1 pen).

Examples of successful implementation of secondary processing. Let's consider the statistical data on secondary processing for the last 5 years, using the example of research on the environmental efficiency index of Yale University (Fig. 2.8).

COUNTRY	RANK	EPI SCORE	10-YEAR CHANGE
FILTER BY REGION: ALL REGIONS			
Luxembourg	1	79.10	NA
Austria	2	77.40	0.10
Switzerland	3	76.40	0.10
Czech Republic	4	74.90	0.40
Iceland	5	73.90	2.80
South Korea	6	72.00	3.00
Singapore	7	71.70	2.70
Sweden	8	70.80	3.20
Norway	9	70.70	3.40

Figure 2.8 – Research on the Yale University Environmental Performance Index 2022 (Wolf et al., 2022)

Most of the European countries are among the leaders in the rating. It is not surprising, because if we look at the statistics of waste processing in Europe (Fig. 2.9), we can see that in 2020 recycled materials reached the mark of 46% of all available waste, which is a significant indicator.

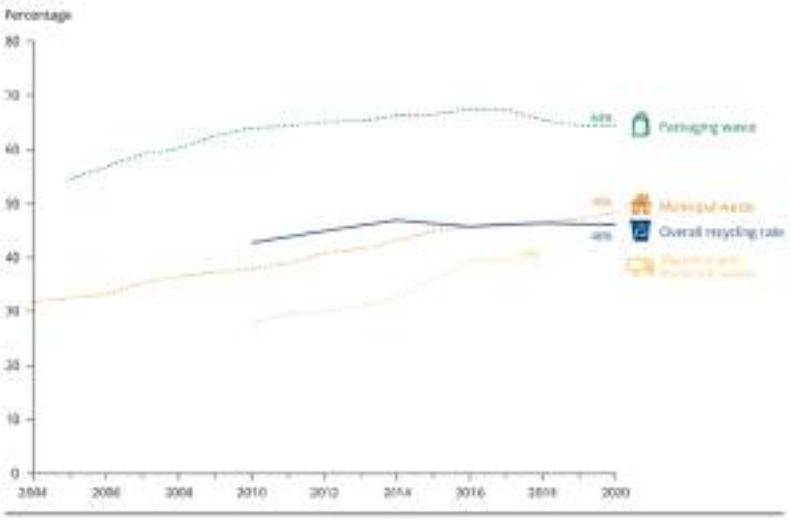

Figure 2.9 – Figure 1. Recycling rates in Europe by waste stream (EU-27) (The European Environment Agency, 2022)

According to Wolf et al. (2022) and data of Environmental Performance Index, Switzerland is recognized as the greenest country in the world. This suggests that this country can really be considered as a good example and role model in the implementation of recycling. Also, let's look at information about secondary processing of resources in Switzerland.

Recycling is a way of life in Switzerland: almost 53% of all waste generated is recycled, one of the highest rates in Europe. The Umweltschutzgesetz (Environmental Protection Act – USG) of 1983 makes residents responsible for the waste they produce through taxes and strict policies. The Swiss recycling system is complex but efficient, and each type of material has its own disposal method.

Recycled materials are usually either repurposed or reused. The two most recycled items in Switzerland are glass and aluminum, both of which are relatively easy to process. Beverage companies often reuse glass bottles after they have been thoroughly cleaned. Otherwise, in the process of processing, glass is melted and then transformed into new glass or added to building materials. For aluminum packaging, metalworkers can melt and recycle it any number of times without compromising its quality.

Things like clothing and electronics require more specialized processing and often end up outside of Switzerland. According to the Bundesamt für Umwelt (Federal Office for the Environment – BAFU/OFEV/UFAM), most recycled clothing can still be worn, so organizations sell or donate it abroad. They usually burn unsaleable clothes and shoes. To recycle electronics, recycling specialists first take it apart and sort the parts. They then usually export the scrap metal outside of Switzerland to complete the process.

Recycling in Switzerland is not a problem, because there are all the necessary resources that, according to the region, provide specific information to understand how to sort and where the collection points are. Recycling-Map (Cordary, M. (2023). provides a useful and easy-to-use map of recycling collection points throughout Switzerland. Public facilities are usually free. If your waste is properly sorted and stored, the municipal recycling service can collect it from your home.

Paper and cardboard recycling in Switzerland. 90% of paper purchased each year comes from recycled paper. This highlights the value of recycled paper as a Swiss resource. As paper and cardboard are among the most common recycled materials in Switzerland, it is easy to find a public collection point or home collection point.

Recycling of plastic and PET bottles in Switzerland. Like many other countries, Switzerland distinguishes between regular plastic bottles and polyethylene terephthalate (PET) bottles when sorting recyclables. Some recycling centers accept PET bottles, and they can also be returned in special PET containers at grocery stores. Non-PET plastic can be left at the collection point where these products were purchased.

Glass processing in Switzerland. Switzerland reuses or recycles an impressive 94% of its total glass waste. Some communities may have a separate container for reusable glass and another for recycling.

Metal processing in Switzerland. Another very often recycled material in Switzerland is metal in the form of aluminum packaging and tin cans. Suitable containers for recycling metal products are quite common in public places.

Processing of clothing and clothing materials in Switzerland. The increase in the volume of purchase and disposal has turned clothing into a serious environmental problem. Since there is not yet a way to recycle clothing and textiles, reuse is the best way to go. In Switzerland, there are donation containers that accept men's, women's and children's clothes and shoes. These organizations can also carry out specialized roadside pickup if

necessary. They also accept bedding and stuffed animals, but will burn dirty or damaged clothing.

Recycling of other household items in Switzerland. Appliances and Electronics: This includes everything from mobile phones to refrigerators and computer components that need to be sent to a specific recycling location. After the end of the service life, you can return electronics and appliances to the store where they were purchased (Recycling Map, 2023).

Batteries. There is a very specific process for recycling discharged batteries. As with electronics, batteries are returned to stores when they stop working.

Furniture: Furniture in decent condition can be donated to charities. If the furniture is no longer suitable for use, it can be handed over to the point of disposal of "oversized items".

Light bulbs: Fluorescent light bulbs, energy-saving light bulbs and LEDs can be recycled, which can be returned to the store or collection point. Currently, ordinary light bulbs are not recyclable, so they are thrown out with household waste.

Food waste composting in Switzerland. Since 2000, it has been illegal to send organic waste to landfills in Switzerland, which means that residents must dispose of it in an ecological way. According to the BAFU (OFEV/UFAM), food waste is a serious problem and Switzerland has committed to halve the amount by 2030. Household food waste includes fruits, vegetables, coffee grounds and filters, tea bags, eggshells, etc. This waste in Switzerland can be composted at home in the backyard or in the garden, or food waste can be taken to any green waste collection point.

Composting garden waste in Switzerland. Switzerland composts garden waste widely, and it is quite easy to find a collection point to take it away.

Garbage removal in Switzerland. For household waste that cannot be recycled or composted, you can use the services of your local municipality for garbage collection. In this case, the municipality collects garbage from underground or roadside containers.

Penalties for illegal dumping or recycling of waste in Switzerland. Switzerland takes waste disposal and recycling regulations very seriously, with heavy fines for illegal dumping or recycling. If you dispose of improperly packaged or unpaid trash, authorities can open the bag and potentially trace it back to your family. The fine for illegal dumping is up to 10,000 Swiss francs (Vox Ukraine idea, 2023).

State of secondary processing in Ukraine. In-depth statistical information is not available, but according to data from several sources, we can learn that as of 2021, about 7% of all waste in Ukraine was recycled and 1.7% was incinerated. The data is quite sad when compared with any European country where more than 40% of waste is recycled (DLF attorneys-at-law, 2021; Semko, 2020). If you look deeper, namely into legislative processes and the organization of processing enterprises, to understand the essence of the problem.

Almost 450 million tons of waste are generated in Ukraine every year, of which no more than 3% is recycled. The rest are buried in landfills, the area of which – 167 thousand hectares – exceeds the territory of the country's natural reserve fund. According to approximate data, about 30 billion tons of household waste are concentrated in landfills – "Klondike" for recyclers. However, instead of recycling waste and making a profit from it, as happens in civilized countries, where up to 60% of glass, paper, plastic and other waste is recycled, Ukraine's potential budget funds rot in landfills for years, simultaneously polluting the environment. Formally, secondary processing in Ukraine is regulated by the laws of Ukraine "On Environmental Protection", "On Ensuring Sanitary and Epidemic Welfare of the Population", "On Management of Radioactive Waste", "On Metal Scrap" and the Code of Ukraine on Subsoil (Wikimedia project participants, 2023).

The key word is formally, because according to the same principle, the construction of waste sorting and processing enterprises was planned by 2020, but as we can see from the statistics, no serious changes have taken place.

According to the analyzed information from existing enterprises (Economic truth, 2023), we understand that the capacities for processing the main raw materials, namely glass, paper and plastic are available, but the problem in everything is the lack of high-quality raw materials for processing. That is, we have the problem of managing this raw material, starting from its quality sorting and ending with its final destination.

The solution is behind legislation and policy that will make it unprofitable to hand in unsorted waste and take it to landfills without recycling and force the situation to improve. The introduction of responsibility for the waste of enterprises, fines for failure to sort, as well as an increase in tariffs for the removal of garbage to landfills are key aspects that will lead to real changes. Namely responsible sorting, development of processing enterprises and the industry as a whole.

Recommendations for the development of recycling in Ukraine. Above, an analysis of the existing situation in Ukraine, as well as the existing and most importantly successfully implemented system of secondary processing of raw materials in Switzerland was carried out. Further, we consider it expedient to develop recommendations based on the successful experience of Switzerland, and at the same time adapted to the current situation in Ukraine. These recommendations will be useful for the implementation and development of recycling in Ukraine.

Table 2.16 – Recommendations for the development of recycling in Ukraine (No Waste Recycling Station, 2023; Swiss Recycling, 2023; Intergovernmental Panel on Climate Change (2023).

Direction	Recommendations
To improve the situation with raw materials and waste management: (Since the enterprises for the processing of the main secondary raw materials are already available, but there is a problem with the raw materials)	• Implement the responsibility of citizens and enterprises for waste at the legislative level. • Raise tariffs for the removal and disposal of garbage at landfills, which will make this method unprofitable. • Introduce fines in case of non-fulfillment of responsibility, as well as for the use of unprofitable outdated methods (we are talking about taking garbage to landfills, throwing unsorted garbage, incineration, etc.).
To implement state support for recycling: (After all, existing enterprises engaged in educational and processing activities are private and charge a fee for their services, while for encouragement, these services should be convenient and free, or at the level of minimum tariffs.)	• Development of the ecosystem for waste sorting and delivery in all settlements of the country. Collection points and transportation systems, as well as new businesses and recycling centers. • Agree on cooperation with foreign enterprises, and accordingly organize the export of raw materials and waste, the processing of which is impossible in Ukraine. • Development of a convenient navigation system for citizens, which will help to easily learn how to sort, what conditions and rules, where to find a collection point for certain waste. Based on the example of the existing system in Switzerland

Continued table 2.16

To promote and advertise a socially responsible attitude to recycling, create a fashion for sorting and recycling:	• Given the available digital capabilities, it is recommended to create a mobile application or a separate section in the DIA application to help with recycling issues. And also to add a certain rating, which will show the leaders of sorting both among individuals and enterprises, or by communities, which will additionally stimulate citizens to take responsibility. • It is also worth agreeing on cooperation with bloggers and media persons who are leaders in various fields, so that they show an example of a responsible attitude to recycling in their social networks and life, as well as shoot social advertising for TV with their participation. • Develop external advertising of a social nature, which will stimulate conscious and responsible sorting of waste. According to the already existing example from the Patrol Police [15]. • Taking into account the successful experience with monetary assistance from the Support for vaccinations, develop a system of incentives: Every week or every month, hold raffles chosen by bloggers for certain desired things for posting their garbage sorting actions. Everyone puts it out there and creates a fashion for the sort, and everyone who participates can win a prize. And also weekly or monthly to give a certain cash or sponsorship reward to the leaders of the ratings offered above in the mobile application «Dija».
Examples of social advertising: (by the type of educational information to improve citizens' awareness.)	The following information may be used for billboard and television advertising: • Know your local system: go to the app/site, select the raw materials you want to hand over and see the collection points in your area. • Get into the habit of cleaning and separating: Get started and you'll soon get into the habit of recycling, which will make the whole process easier. • Less is more: Participating in recycling also means crushing cans, squeezing bottles and breaking up cardboard boxes. The less space the processing takes up, the cheaper it is to transport the system. • If you are not sure - ask: there are fines for violating waste disposal rules. Better to be safe than sorry.

Recycling is an effective method in the fight against waste and its secondary processing, which is beneficial from the point of view of economic and ecological components. According to available statistical data, more than 40% of waste is recycled in most European countries. Whereas in Ukraine – about 7%. The article analyzes the main types of sorted waste that can be used as raw materials for secondary processing, and based on the research data of the Yale University, the main European countries that are currently leaders in secondary processing are identified. The analysis schedule of the waste processing system in Europe is given. Analysis of European countries showed that Switzerland, which is the "greenest" country according to most data and indicators, can be considered a model. Based on these statements, several key components of the waste management system in Switzerland were analyzed, the participation and influence of state and regional authorities on the activities of communities for waste collection and disposal were analyzed, and examples of the control system for the implementation of these processes were also studied. The work highlights the most important components of the successful implementation of recycling in the country and developed recommendations for transferring experience to the current situation in Ukraine in order to solve problems with raw materials and increase responsibility for waste. These recommendations are focused not only on aspects of improving the overall waste management system, but also on the principles of customer-oriented marketing, where waste is a raw material for businesses engaged in entrepreneurial activities in the field of secondary processing. It is also proposed, based on the experience of the studied countries, to implement in Ukraine effective components of the waste management system proven by practice. The data obtained in the work can be useful both for scientists and for those who work in fields related to recycling, waste management or waste management, community development or enterprises that benefit them.

2.7. The innovation and investment resource for sustainable development

Social expenditures should be seen as state social investments in human development. For many low-income countries official development assistance (ODA) remains an important source of social finance. Since the

adoption of the Millennium Declaration the volume of ODA increased to 133 billion dollars. However, to achieve long-established United Nations ODA target of 0.7 percent of gross national income of donor countries need to provide such assistance more than doubled. Prospects for achieving this target will soon not give any reason for optimism, as donor countries are facing budget problems (World Bank, 2021). The consequence of awareness of the importance of additional social investment at a guaranteed basis was scientific research development of innovative financing mechanisms to complement traditional ODA.

Innovative approaches to topical issues of international social investment differ Ukrainian economic research scientists K. Boichenko, Y. Chaliuk, O. Kasperovich, D. Kucherenko (Kucherenko, 2021), O. Novikova, O. Pankova (Pankova, 2021), M. Tepliuk. Among foreign economists should be noted such as D. Bhattachariya, D.K. Galbraith, S. Griffith-Jones, K.S. Jomo, D. Ratha, and M. Yunus. However, need further intensification of research efforts in this area because of the important role played by international investment policy in the complex mechanism of global regulation of the social sphere.

The purpose of this study is to solve the following problems. Firstly, to analyze the potential use of new sources of social investment and implement classification by combining two groups of global resources and income from the public sector. Secondly, to determine the efficiency of international social innovative mechanisms of financing and make their typology, highlighting the mechanisms by which to restructure cash flow, manage risk, and attract private sector investment resources. Thirdly, to give reasons that prevent the effective use of innovative international financing mechanisms for social services.

It is important to emphasize that the only established definition of innovative mechanisms of international social investment does not exist. Lack of precise results in the fact that in many studies the term “innovative mechanisms of financing for development” is interpreted widely. It includes all types of non-traditional sources of financing from mechanisms such as securitization of ODA commitments, international taxes and a new distribution of specialized Drawing Rights (SDRs), issue bonds in local currency and foreign currency hedging issue bonds indexed to gross domestic product. Columbia University Professor Stephanie Griffith - Jones adds to aforementioned innovations guaranteed by the state insurance mechanisms against weather risks (Griffith-Jones, 2020). Chief Economist of the World Bank Dilip Ratha offers incentives for social investment

through remittances of workers (Ratha, 2019). New investment opportunities diasporas and migrants reveal the Doctor of Economics from Bangladesh Debapriya Bhattacharya (Bhattacharya, 2022).

American Professor James K. Galbraith, who heads the Association "Economists for arms reduction", examines the demilitarization of a powerful social resource of international finance (Galbraith, 2016). Making conclusions from the analysis of innovative ideas was the problem created by the UN High Level Group on Financing for Development. It included the governments of 63 countries and international and civil society organizations. This initiative Group gave the definition of innovative sources of international social investment as follows: including all mechanisms to mobilize funds to supplement official development assistance, provide a steady flow of resources on a predictable basis and is closely related to the concept of global public goods (WESS, 2018).

In its turn leading scientific committee of UN experts pointed out the following characteristics of innovative mechanisms of international social investment. Firstly, the link to the official sector, including the use of public resources and private sectors, charities, and secondly, international cooperation and the transfer of resources to developing countries, and thirdly, innovative character and fourthly, the ability to generate finance for development, which is additional to ODA (GAFSP, 2022).

According to Ukrainian scientists and economists K. Boichenko and M. Tepliuk in the context of innovative financing for development should take into account the globalization process that has to be achieved by taxing those sectors that benefited most from globalization, such as the financial and trade sectors [Boichenko, 2019]. By carrying out the classification of new global social investment resources, it makes sense to combine them into two groups (Tables 2.17 and 2.18).

The first group of innovative sources include revenues from the public sector, including the internationally agreed tax as a solidarity tax on airline tickets, taxes on financial and currency transactions, taxes on carbon (Table 2.17) (WESS, 2018; Boichenko, 2019).

The second group includes revenues through global resources, including allocation of SDRs and revenues associated with the use of the resources that are in the public domain, for example, the development of mineral resources of the seabed in international waters (Table 2.18) (WESS, 2018; Boichenko, 2019).

Table 2.17 – Receipts of the public sector (calculated according to date (WESS, 2018; Boichenko, 2019)

New resources	The current amount of resources (in billion U.S. dollars a year)	The amount of potential revenue (in billion U.S. dollars a year)	Efficiency
EU Governments auction: sell or allocate permits for emission allowances	0,2	1-5	Germany has agreed to allocate 15 percent to international climate finance.
2 per cent tax on CERs under the Clean Development Mechanism	0,06	0,06-0,75	Additional financing for climate adaptation in developing countries.
Small tax levied on airline tickets, proceeds earmarked for UNITAID	0,2	1-10	$1.0 billion was raised the last 5 years.
Norway's tax on CO2 emissions from aviation fuel	0,02	0,02	Norway contributes a portion of the proceeds of a tax on CO2 emission from aviation fuels to UNITAID.
Tax on use of fossil fuels and other products contributing to CO2 emission	–	250	A tax of $25 per ton of CO2 emissions by developed countries.
Currency transaction tax (CTT) (proposal)	–	40	Assumes 0.005 per cent tax.
Tax on financial transactions, such as equity trades, bonds and derivatives.	–	15-75	A European Union FTT could raise € 55 billion per year (excluding taxes on currencies).
International billionaire's tax (proposal)	–	40-50	Proposal is not yet in any International agenda.

Table 2.18 – The use of global resources (suggestions) (calculated according to date (WESS, 2018; Boichenko, 2019)

New resources	Current level of resources (billions of US dollars per year)	Approximate potential revenue (billions of US dollars per year)	Efficiency
New SDR issuance (proposal) of IMF	–	160-270	Additional international liquidity would increase reserve availability.
Idle SDR holding of reserve-rich countries are leveraged for investment in development	–	100	Assumes $ 100 billion on annual allocation to developed countries.
Charge royalties for natural resources extraction beyond 100-mile exclusive economic zones	–	–	Requires agreement on regimes for managing global commons, such as the International Seabed Authority.

Although proposals for potential funding of international development cooperation, included in both of these categories are discussed during more than one decade, almost none of themexcept proposals for a tax on airline tickets until approved. Many countries do not want to support international taxation, because they believe it undermines the national sovereignty (Global economic outlook, 2022).Making international reserve assets could stimulate the flow of funds to finance global development and social needs. Since SDRs are allocated on the basis of quotasin the IMF, the benefit is mostly developed nations. However, if two-thirds of SDRs distributed among developing countries, they would receive annual funds in the amount of 160 to 270 billion dollars. U.S. (Global economic outlook, 2022). Innovative mechanisms of international social investment should be divided into three types: the mechanisms, by which it is possible to restructure the cash flow, reduce risks and attract voluntary private contributions (Table 2.19) (World Bank, 2021; WESS, 2018).

Table 2.19 – Innovative mechanisms of international social investment (calculated according to date (World Bank, 2021; WESS, 2018)

Innovative mechanism	Current level of resources (billions of US dollars per year)	Approximate potential revenue (billions of US dollars per year)	Comment
1. Mechanisms that restructure cash flow			
International Finance Facility for Immunisation	0,6	0,6	Over the last 5 years, IFFIm raised $3.6 billion.
Debt2Health (an innovative financing initiative of the Global Fund)	0,02	0,02	Over the last 5 years, Debt2Health deals worth $170.2 million were concluded, one half of which countries contributed to the Global Fund. This is additional to existing ODA for countries that are current on their debt payments
Debt relief in exchange for local investment in the environment	0.05	0.05	Has raised an estimated $1.1 billion-$1.5 billion. This is additional to existing ODA for countries that are currently on their debt payment.
2. Mechanisms to manage risk			
Pilot advance market commitment for vaccines	0,5	1,5	Financing comes out of ODA budgets with small amount of additional financing provided by the Gates Foundation
Affordable Medicines Facility -malaria (AMFm)	0,2	0,2	About half the financing comes from UNITAID. UNITAID financing, in total, half of AMFm financing is from traditional ODA, 50 per cent from innovative financing and from philanthropy
Caribbean Catastrophe Risk Insurance Facility (CCRIF)	0	0,068	Donor countries and the World Bank capitalized the insurance fund
3.Mechanisms that leverage citizen or private sector resources			
“Product Red”	0,04	0,04	A brand licensed to private firms.

The first category includes mechanisms of transformation of debt, such as debt relief scheme for the purposes of Health “Debt2Health” (“duty to care”) and the mechanism of replacement debt costs for environmental protection. Resources released by debt cancellation, which belongs to the creditors, or by buying debt from commercial banks at a discount in the secondary market debt. Payments related to service these debt obligations, in whole or in part directed at specific public purposes or for the purposes of private projects, mostly in the field of public health or environmental protection (World Bank, 2021).

Problem mechanisms of the second type - try to raise funds to cover certain risks associated with health and disaster management through established programs at the international level guarantees and insurance. For example, manufacturers-based combination therapies for malaria treatment artemisinin reached an agreement on setting lower prices in exchange for providing a guaranteed market and provide temporary subsidies as a means of exclusion from the market of older, less efficient alternative drugs (WESS, 2018).

From the risk insurance fund in case of disasters in the Caribbean region risks are covered for the system of state finances related to natural disasters such as hurricanes and earthquakes. Capital Fund formed by donors and allows the members of the Caribbean Community to carry out collective insurance of potential damage above a certain threshold (Global economic outlook, 2022).

Problem mechanisms of the third type – seek voluntary contributions to private agents. As part of the famous program «Product Red» companies are licensed to use this brand for specific products in exchange for a donation of profits from the sale of goods and services to the Global Fund to Fight AIDS, Tuberculosis and Malaria (WESS, 2018).

Innovative funding for public health purposes (Fig. 2.10) is mainly used for funding GAVI Alliance (Global Alliance for Vaccines and Immunization), the Global Fund to Fight AIDS, Tuberculosis and Malaria and YUNITEYD (International Organization for procurement of drugs against HIV, tuberculosis and malaria). Based on the data in Fig. 2.10 (WESS, 2018), we can conclude the following. Only UNITAID funded primarily from innovative sources, as 75 percent of its resources comes at the expense of collecting taxes on air travel.

In general, priority is given through existing mechanisms tend to finance global public goods, rather than in support of a broader process of social development at the national level. Thus, the share of climate change

mitigation programs account for about two thirds of the resources allocated through innovative financing mechanisms.

Figure 2.10 – Share on Innovative Financing for Global Health Fund, over the past ten years (combined figure) (calculated according to date (WESS, 2018))

As in the case of global funds in the health sector, the growth of the number of funds related to climate change in recent years has meant that international aid was fragmented in nature [GAFSP, 2022]. This problem can be largely solved by combining traditional and innovative mechanisms for financing development in the structure with a smaller number of institutions that have more authority, clearly defined mandates, while ensuring close coordination and by combining resources received in each such institution. It is also important that the management bodies of these structures led to balanced representation in their governments and institutions that provide funding and recipients of these funds, and that they ensure proper control and accountability.

This classification takes into account the restructuring instruments of the cash flows, reduce risks and attract voluntary private contributions. Systematized and structured new global social resources on two criteria: the internationally agreed tax on air tickets, Carbon Emission, financial transactions and receipts through the global resources.

Today the opportunities associated with the use of innovative financing mechanisms, not fully implemented. One major problem is that these mechanisms lead to an increase in administrative costs. However, in case political conditions for a substantial expansion of international social investment recipient countries must be prepared to ensure proper management of resources, including on the basis of distribution in the mechanisms of countercyclical macroeconomic management and medium-term programs of public expenditure.

In this regard, it is important to also international cooperation in the field of taxation, providing reduction of tax evasion and non-payment. In political terms, bringing global resources and revenues from tax increases on the international level to address global problems seem much more difficult than taxing for purely domestic purposes. But like all political decisions made for future generations, not just to win the next election, this issue should be carefully analyzed in view of possible scenarios, including a dangerous scenario of events in which stored social polarization, social isolation, political confrontation and lack of security. Social expenditures should be seen as state social investments in human development.

2.8. Smart grid in Ukrainian energy system

The need for electricity and the energy system's capacity is growing every year. According to the forecast of the International Energy Agency (IEA), by 2030, the growth rate of demand for electricity will be 1.5-2 times faster than the growth rate of demand for primary energy carriers (Oliinyk, 2021).

According to the Paris Agreement of 2015, it is up to all countries to balance anthropogenic emissions from sources and the absorption of greenhouse gases in the second half of the 21st century to limit the increase in the global average temperature to 1.5 °C. Ukraine's achievement of this goal depends significantly on the energy industry development (Khomenko et al., 2022).

At the same time, the energy system of Ukraine has some problems, in particular (New Voice, 2020; Oliinyk, 2021; Makogon, 2023):

– high level of wear and tear of the main and additional equipment and lack of funds for their modernization (wear and tear more than 70%);

– uneven network load distribution;

– a large proportion of power plants use fossil fuel resources (coal, gas, etc.);

– accidents and low reliability due to uncoordinated operation of emergency automation systems;

– technological losses of electricity during transmission and distribution in networks (11.6% in 2019 or up to 15 billion kWh of electricity);

– commercial electricity losses (due to old meters, unsatisfactory level of reliability of power supply systems);

– significant losses of wind (90%) and solar (50%) generation due to the full-scale invasion of the Russian Federation;

– accumulated significant debts to investors regarding green energy.

Smart grid technologies can solve most of the energy companies' problems.

Smart grid involves the use of communication technologies, the collection of information on the production, transmission, and consumption of electricity in real-time, and effective control and management of the network without human intervention.

The critical role of smart grid technology in energy development is evidenced by the current market volumes and its projected growth (Fig. 2.11).

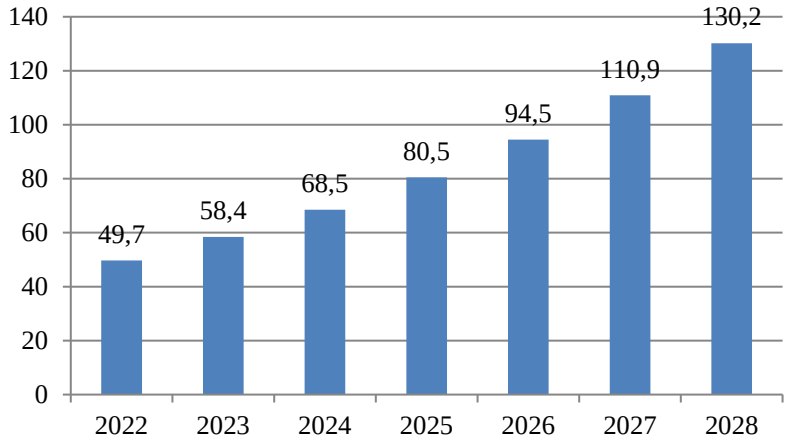

Figure 2.11 – Forecasted volumes of the smart grid technology market in the world during 2022–2028, in billions of dollars. USA (Statista, 2022)

According to a report (IEA, 2022), despite the economic crisis caused by Covid-19, investment in smart grids is expected to double by 2030 to reach 100% zero emissions by 2050, especially in emerging market countries and in developing countries.

Components of smart grid technologies in the energy industry (Volta, 2023; New Voice, 2020; Denisyuk & Stsheletsky, 2019; Krushtymki, 2023; Matviychuk et al., 2019):

– smart metering – an intelligent meter transmits data on electricity consumption in real-time, thanks to which it is possible to maintain the set rules of behavior during peak hours and other times;

– dynamic grid management – connection of all equipment to an intelligent network, making it possible to monitor power outages at the consumer in real-time and timely. Thanks to this, the energy company can quickly detect an emergency and prevent it;

– demand response – provides regulation of demand by shifting it in time, for example, by turning on energy-intensive equipment only at times of the lowest load;

– increased security – network video surveillance and limited access technologies allow to monitor of remote smart grid resources at all times, avoiding interception and distortion of information, as well as system shutdown;

– integration of renewable energy into the power grid – provides for the possibility of effective integration of power plants based on renewable energy sources, which strongly depends on weather conditions to a centralized system;

– work with large amounts of information when a person cannot cope – the production of electricity by stations based on renewable sources can change over time, and the use of smart grid data and automation allows for an uninterrupted supply of electricity to consumers;

– digitalization of the energy sector – the use of digital technologies to change the business process and improve efficiency. It allows comprehensive management of electric power systems and ensures the optimization of all business processes for the stability of the industry;

– power electronics (FACTS / HVDC) – allows transmitting high-voltage direct current and flexible alternating current over much longer distances;

– energy management system (EMS) – helps to ensure the reliability of supply, efficient use of production resources, and reduction of energy transmission costs;

– intelligent automation and protection of substations – allow to ensure a high level of protection of people and power facilities, remotely monitor errors, enable predictive maintenance, support engineering and testing, reduce manual interactions and speed up individual operations, and reduce installation and maintenance costs;

– comprehensive monitoring of the state of substations – ensures tracking of all components of the substation;

– communication solutions – combine centralized and decentralized electricity production into a single system;

– distribution management systems (DMS) – allow a reduction in the duration of power outages, minimize losses due to improved monitoring, balance demand and distributed generation, reduce maintenance costs due to online monitoring;

– distributed energy resources (DER) – requires the creation of a virtual power plant that connects several small plants, the participants in the energy market. Thanks to it, new sales channels are used that are not available to operators of individual plants;

– decentralized energy management system (DEMS) – uses real-time forecasting, operational planning, and optimization. Thus, it is possible to predict electrical and thermal loads, forecast electricity production from renewable energy sources depending on the weather forecast;

– intelligent solutions for measurement – record energy consumption by each consumer over time and provide information about their consumption. It allows for saving electricity consumption significantly.

Some factors contribute to smart grid technologies gaining popularity and are increasingly used in the energy sector.

The drivers of smart grid implementation in the energy sector are (Denysyuk & Stsheletsky, 2019):

– Internet of energy (IoE) – the use of the Internet of Things with various energy systems; provides "mobility" of energy, such it is as easy to connect to the energy system as to the Internet;

– decentralized energy – involves the development of projects for electricity generation with small capacities; includes distributed generation, demand management and energy efficiency, microgrids, electric vehicles, and distributed electricity storage systems;

– industrial Internet of things (IIot) – a system of computer networks and industrial objects to which various sensors, counters, and other devices are connected, allowing collection, transmission, visualization, processing, and remote management of data without human intervention;

– a single information platform – the formation of a single digital platform that will provide data analysis at energy facilities and management decision-making;

– risk orientation – forecasting the technical condition of equipment and identifying dangerous trends at the initial stages (based on mathematical algorithms) for timely response and prevention of breakdowns and accidents;

– customer services – intelligent contracts, interactive service, various electricity tariff packages;

– supply and demand aggregators – companies that simultaneously manage the power-consuming equipment of several consumers and are participants in the wholesale electricity market.

The state, operators (energy companies), businesses, and end consumers will benefit from the introduction of smart grid technologies in the energy sector of Ukraine.

Benefits for the state from the use of smart grid (New Voice, 2020; Oliinyk, 2023; Matviychuk et al., 2019):

– development of an energy industry based on renewable energy sources (solar, wind, hydropower);

– reducing the duration of emergency power outages;

– ensuring a stable supply of electricity to the population;

– increasing the reliability and quality of electricity supply;

– reduction of the environmental load (because during peak periods, coal-fired thermal power plants, which pollute the environment, are used to avoid accidents);

– reduction of dependence on external supplies (or imports) of organic fuel or electricity;

– improvement of conditions for economic integration and competition;

– the innovative impulse for the economy.

Benefits for the energy company (Oliinyk, 2021; Matviychuk et al., 2019):

– better accounting of electricity consumption;

– electricity demand management;

– increase in energy efficiency;

– more effective management of electricity production, supply, and consumption processes;

– reduction of operational costs and improvement of reliability of electricity supply;

– increasing productivity and labor safety of energy company employees.

Benefits for the population (New Voice, 2020):

– minimization of negative consequences for consumers thanks to automatic management of all processes of the energy company;

– eduction of time of lack of electricity and provision of stable supply;

– the possibility of earning electricity thanks to installing solar panels on the roofs of buildings.

Benefits for business (New Voice, 2020):

– ease of connection to power grids;

– increase in network reliability;

– quick elimination of emergencies.

– For smart grid technologies to work effectively, they must have certain features.

The main features of smart grid (Wikipedia, 2023):

– reliability – thanks to state assessment technologies, the smart energy system detects malfunctions and self-restores without the intervention of specialists;

– flexibility – adapted to bidirectional energy flows, which allows connecting solar batteries, charging batteries of electric cars, and wind turbines;

– efficiency – achieved through demand management, voltage reduction on distribution lines when possible, complete use of generators, reduction of redundancy in transmission and distribution lines;

– stability – neutralizes the effects of weather conditions and ensures stable operation of the system;

– market opportunities – balancing demand and supply due to introducing a double tariff for energy during peak hours.

Thus, considering the components and features of the smart grid, several directions of development and implementation of smart energy systems are distinguished.

Directions of technologies of smart energy systems (Matviychuk et al., 2019):

– integrated communications – provide management and data exchange in real-time,

– sensors and meters - allow monitoring and measuring data from meters; include smart meters and phase meters;

– high-tech components – provide for distributed management of energy flows and intelligent energy generation;

– intelligent control – involves the presence of a control system, software, and high-speed computers, automation of substations, and response to demand;

– improved interfaces and decision support – include visualization technologies for ease of perception; software systems that provide huge opportunities for operators when intervention is needed; employee training simulators and scenario analysis systems.

The following steps must be taken to implement smart grids at the state level (Oliynyk, 2021).

1. Implement automated monitoring, intelligent control, and protection systems - this will reduce the impact of the human factor and, as a result, reduce the time of power supply interruptions in the system.

2. With the help of information and communication technologies, modernize the tools that support the balance between the production and consumption of electricity - for example, switching to LED lamps instead of incandescent lamps, which ensures the same lighting level, but with lower electricity consumption.

3. Implement the tools of controlled electricity conversion – this will allow using electricity only when and in the amount needed and not using it at other times.

4. Integrating renewable sources of power plants (sun, wind, water) will reduce the production and use of fuel resources.

5. Develop a microgrid (microgrid) is a group of consumers and sources connected to a common network, but they can function autonomously. It can reduce regional energy dependence.

6. Implement means of energy storage – they allow to "store" electricity in periods of minimal load, and give it out in peak hours, thus balancing generation and consumption.

7. Implement high-speed regulators of power and voltage flows – they allow for leveling out voltage changes and ensure system stability.

8. Implementing smart electricity accounting will allow one to receive meter readings remotely. Thanks to this, the system of mutual settlements between the consumer and the energy company is improved, electricity theft is avoided, and the quality of the electricity supply is controlled.

9. Carry out large-scale digitalization – thanks to which it will be possible to optimize all business processes and ensure the stability of the energy system of Ukraine.

10.Move to the concept of uninterrupted power supply (or minimal interruptions).

Several companies in Ukraine are actively implementing Smart Grid technologies in the Ukrainian energy industry. These include (New Voice, 2020):

Tractebel is a Belgian company engaged in developing and implementing Smart Grid technologies together with NEC Ukrenergo.

DTEK – implements the installation of "smart meters" and automates the electricity supply system using modern software. It allows seeing emergencies and fixing them quickly.

At the same time, the leading developers and suppliers of intelligent network systems at the global level are (Maynard & Sat, 2022):

ABB is a Swedish-Swiss company, one of the world's leading electrical equipment manufacturers. The goods of this brand are characterized by high quality. Innovative technologies, high-tech equipment, and modern materials are used in their production. ABB's main areas of activity: are electrical equipment, robotics, electric drive, automation for industrial purposes, and power grids.

CISCO Systems Inc. – a world leader in information technologies and networks, helps companies of all sizes to use new communication opportunities. Cisco purposefully develops new products and technologies, and holistic architectures, such as Cisco DNA, aimed at effective business support.

Eaton – develops solutions in energy supply management, has a staff of 96 thousand employees, and is represented in 175 countries. The company strives to improve people's lives and the environment through energy management technologies that are more reliable, efficient, safe, and environmentally friendly. Energy-efficient products and services help customers effectively manage electrical, hydraulic, and mechanical energy more reliably, productively, safely, and environmentally. The company provides people with the means to use energy more efficiently.

Siemens is the world's leading technological concern, which for more than 175 years, represented the highest level of engineering, innovation, and quality. The company operates in more than 200 countries around the world and specializes in areas such as electrification, automation, and digitalization.

Fujitsu is a large Japanese electronics manufacturer and IT company. It specializes in the manufacture of semiconductors, air conditioners, computers (supercomputers, servers, personal computers), telecommunications, and services.

General Electric produces state-of-the-art, high-tech, intelligent uninterruptible power supply systems for reliable protection of computers, means of communication and telecommunications, automated process control systems, medical, scientific, and other electronic equipment from instability and loss of supply voltage. Safe and managed energy is General Electric's business. The company offers a technical solution that meets all customer requirements with a full spectrum of hardware and software products, including products and software for protecting information systems from failures and managing the power supply process.

Honeywell is an American company producing electronic control and automation systems. The main directions of the corporation's work are the areas of production and maintenance of aerospace devices and auto equipment, equipment for the operation of residential and industrial premises, and production of turbocompressors and specialized equipment and devices. Honeywell Corporation is one of the first hundred most famous manufacturers of industrial automation devices, consumer goods, as well as physical security and property protection devices.

IBM Corporation (International Business Machines Corporation) is an American corporation, the world's largest manufacturer of all types of computers and software, and one of the largest providers of global information networks. The corporation ranks sixth on the list of the largest companies in the world. IBM manufactures and sells hardware and software services (hosting, consulting) in areas from mainframes to nanotechnology. With 330,000 employees worldwide and revenues of $91 billion in 2005, IBM is the world's most significant information technology company. IBM owns more patents than any other technology company. IBM has engineers and consultants in more than 170 countries, and IBM Research has eight laboratories worldwide. IBM employees have won five Nobel Prizes, four Turing Awards, five National Medals for the

Advancement of Technology, and five National Medals for the Advancement of Science.

Itron is an American technology company that offers energy and water management products and services. The company's products and services include smart grid, smart gas, and smart water technology solutions that measure and analyze electricity, gas, and water consumption. Its products include devices for measuring electricity (electricity meters), gas, water, thermal energy and control technology, communication systems, and software. Itron has more than eight thousand corporate clients in more than 100 countries.

Johnson Controls delivers products, services, and solutions that improve energy efficiency and lower operating costs in buildings for more than one million customers. Operating in more than 150 countries, it is a leading supplier of equipment, controls, and services for heating, ventilation, air conditioning, refrigeration, building control, and security systems. The company also offers the expertise, services, and strategic vision to make the client work within their current system, optimizing their building's performance and reducing overall costs.

Landis+Gyr AG – in 2011 Landis+Gyr was acquired by Toshiba Corporation. It allowed focusing efforts on the up-and-coming field of energy management solutions, with an emphasis on SMART measurement technology. By joining forces, Toshiba and Landis+Gyr quickly became a world leaders in management solutions contributing to more efficient and economical use of the world's energy resources.

Oracle Corporation is an American corporation, the world's largest software developer for organizations, a significant supplier of server equipment, and a developer of database management systems, database development tools, and ERP systems.

Also, important players in this market are Panasonic Corporation, Robert Bosch GmbH, Schneider Electric, Tantalum, and Wipro.

Thus, the experience of using smart grid technology in different countries of the world shows that it allows for overcoming several technological, environmental, and economic problems in energy; is beneficial for the state, the energy sector, business, and the population and meets the demands of the innovative economy of the 21st century and the requirements of sustainable development.

2.9. Green IoT for energy efficiency and environmental sustainability

Energy consumption has risen to alarming levels over the last decade due to massive digital adoption in 2020. In the near future, experts anticipate a phenomenal data rate and a massive content size at the cost of unprecedented carbon emissions into the environment.

As a result of these massive (CO2) emissions, and environmental and health issues, renewable and green technologies are becoming an increasingly attractive research topic in the evolution of technology. Additionally, current gadget battery technology is a severe challenge, contributing to green technology. The Internet of Things (IoT) technologies will enable future 5G networks to consume less energy and minimize (CO2) emissions.

The Internet of Things (IoT) has been hailed as one of the most endearing technologies of the last decade. It enables the connection of people and things anywhere, anytime, with anybody and everything, via any link or service. It provides a framework for sensors and gadgets to communicate fluidly inside an intelligent environment, enabling enhanced and competent services to humans.

IoT has resulted in building Smart Technology that promotes environmental sustainability by optimising the use of conventional power sources, making reuse of materials, and recycling products; thereby further reducing waste and carbon emissions. Sustainable solutions range from smart homes, smart healthcare, smart agriculture, and smart cities, to name a few. The positive impact of the IoT is improving the quality of life while raising environmental sustainability initiatives.

But billions of IoT devices produce and send a huge amount of data which require significant energy cumulatively as it passes through the network. These devices mostly are operated using batteries. The more frequently batteries need to be replaced, the more batteries end up in landfills. These have propelled issues related to environmental sustainability and challenges to use resources more responsibly and organise processes in ways that reduce waste.

The Internet of things (IoT) unites everyone in the smart world, so the energy consumption of IOT technology is a complex and attractive field of research. The development of technology in the field of IoT changed the way of life and enriched society with its benefits, but we should not ignore the fact that IoT consumes energy, promotes toxic pollution, and forms

electric waste. To increase the advantages and reduce the harm from IoT, there is more and more of a tendency to switch to green IoT (G-Iot). G-Iot is considered the future environmentally friendly IoT. Environmentalization of ICT technologies plays a key role in the G-Iot and promises the company many advantages, such as effective production and reduction of energy consumption used to develop and spread ICT devices and equipment.

The level of interest in Green IOT was also investigated using the category "IoT" and "Environmental Sustainability". The theoretical aspects of 5 categories of Green IOT were studied. The main aspects of the impact of IoT on sustainable development were formed and practical options of such technologies were presented. Also, the statistics of the use of IoT technologies in Smart Cities were studied. The statistics of the global IoT market and the reasons for the decrease in the growth rate of this market were also presented.

The development of Green IoT, its technologies, and the impact of the Internet of Things on sustainable development and ecology are explored in the works of such scientists as Huang H., Elsaadany M., Opasjumruskit K., Sheng, Q. Z., Wang Y. Etc. The purpose is to research Green IoT technologies and their impact on sustainable development.

The most radical innovation of the digital era, the Internet, made a revolution in communication, as well as in the possibilities of connecting. He opened the world for us with one click of the mouse. The era of intermissive interaction led to the appearance of connected devices that interact with each other, making our life convenient. The Internet is now in everyday things, such as food bags, furniture, watches, household appliances, and much more. IoT support devices offer significant potential for new business models and the possibility of receiving income by increasing the efficiency of energy consumption and other costs.

The level of interest in the Green IoT for Energy Efficiency and Environmental Sustainability was investigated. Thus, according to the search query "IoT" and "Smart City" (2018-2022), the appropriate level of interest is determined, which is characterized by a growing trend. The vertical axis shows the level of interest in the corresponding topic in relation to the highest indicator for a certain region and time.

The use of the Google Trends toolkit allows you to monitor relevant trends for certain categories (Figure 2.12).

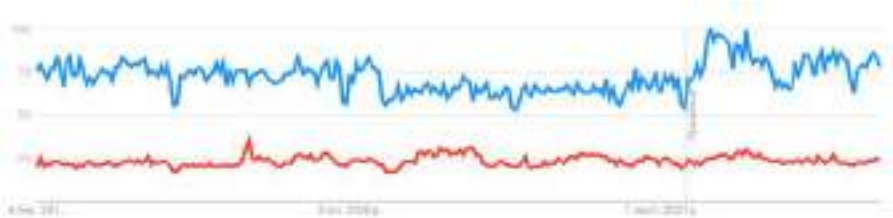

Figure 2.12 – Dynamics of the popularity of search queries of the category "IoT" and " Smart City" (blue line – category "IoT", red line – category "Smart City") (created by the authors on the base of Google Trends)

The level of 100 points characterizes the highest level of popularity of the query. In this case, 0 points mean a location for which there is insufficient data for this query.

As a result, the interest in the category "IoT" is much higher than in the category "Smart City". However, over the past 5 years (2018-2022), a stable interest in the concepts has been observed, but there are moments of greatest interest, so this interest tends to grow.

In addition, the Google Trends (Google Trends, 2023) toolkit allows you to explore the geographical location of relevant search queries. The study results show that the category of "IoT" is the most widely used in the scientific field in China, Ethiopia, Republic of Korea, Singapore, India.

In this case, the maximum number of points (100) means that the location with the highest share of popularity of the query, and the lack of information about the selected category is characterized by zero level and no markings on the map.

In addition, the Google Trends toolkit allows you to explore the geographical location of relevant search queries. The study results show that the category of "Smart City" is the most widely used in the scientific field in the Malta, Pakistan, Mauricio, Vietnam, India (Figure 2.14).

Technology Advances in IoT changed the way of life, enriching society with their advantages. It is important to emphasize and not ignore the fact that the IoT consumes energy, contributing to toxic pollution and electrical waste. Green technologies refer to the development of energy-efficient technologies, including computer and communication technologies. These technologies mean lower energy consumption through more efficient use of existing green infrastructure. After numerous discussions by several authors about what includes green IoT based on green communication technologies and green smart networks, it is

concluded that the technologies that make up green ICT are listed and presented in Figure 2.13.

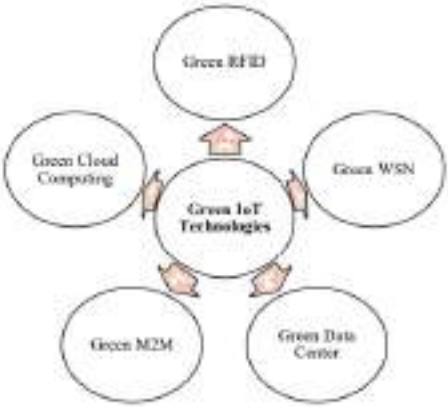

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Figure 2.13 – Green IoT Technologies (Memić et al., 2022)

The exchange of IoT in the real world is possible only through the cooperation of several technologies that enable it, which are implemented through green tags, sensors, and the Internet. Only the synergy of these green IoT providers can create future technologies that will contribute to a smart world and its greening.

To achieve the goal of sustainable development plans developed at the national and international levels, taking into account environmental, social and economic aspects. The Coming Era of Revolution - Green Internet of things. The Green Internet of Things is set to bring significant improving the state of the environment and human well-being making the world smarter using sustainable technological development. The use of technological advances in technologies enabling IoT, Green IoT has great opportunities to strengthen environmental and economic sustainability. There is a great need for and importance of green technologies and green processes in the sustainable development and construction of a smart world. Towards Green IoT for Sustainability development focuses on technologies that adequately contribute to a sustainable environment through the creation of efficient energy-saving systems (MDPI, 2023).

The focus of the G-IoT for sustainable development (Dalal, 2021):

1. Focus on generating efficient energy conservation systems through design technology.

2. Increased energy savings and reduced carbon emissions through leverage technologies.

3. With enabling technologies, G-IoT offers unlimited opportunities to improve environmental and financial performance.

Table 2.20 – Green strategies and mechanisms for G-IoT (Memić et al., 2022)

Green technologies	Energy-saving mechanisms	Energy-saving strategies
Green RFID	– Existence of active tags and passive sensors	– Energy-efficient algorithms and protocols – Reducing the size of rfid tags due to recycling – Production of labels on recycled paper substrate
Green WSN	– Reducing communication between nodes – Sleep mode	– Smart modes of operation through dynamic energy management strategies – New energy-efficient routing algorithms
Green Cloud Computing	– Creating hardware solutions aimed at producing devices that consume less energy – Design of software solutions that consume less energy with minimal use of resources	– Usage of resources that are eco-friendly and maintain computing performance without degradation
Green Machine to Machine (M2M)	– Common energy-saving mechanisms – Use of efficient communication protocols	– Group-based strategies – Low-mobility-based optimizations
Green Data Center	– Energy efficiency – Use of renewable energy sources	– E-waste recycling – Low-emission building materials – Exclude unnecessary content – Minimizing data

Various industry verticals are using IoT technology to create greener solutions, optimizing their operations for greater sustainability and lower energy costs (Jain A., 2023):

1. Energy-efficient homes by monitoring home appliance usage with affordable circuit-level energy monitoring, real-time reporting, smart alerts,

and remote energy management. IoT devices are needed to reduce costs and power consumption. Demand for long-range, low-power IoT-enabled products with indoor and outdoor tracking has increased as it helps homeowners track energy consumption in real-time.

2. Intelligent lighting, heating and cooling according to needs to improve comfort in homes and offices while reducing energy consumption; in addition, Energy Star-certified thermostats learn what temperature users prefer and plot based on that setting.

3. Smart health services and alerts for the elderly to help them lead a safer and more independent life.

4. Smart utility meters and real-time energy monitoring collect, save and send data to smartphones to manage energy and water consumption.

5. Intelligent watering of plants for irrigation using sensor data analysis.

The main goal of sustainable development is to create and maintain a balance between the social, financial, and environmental requirements of society, allowing prosperity for present and future generations. Green IoT aims to bring significant improvements to the environment and human well-being to make the world smarter using sustainable technological development.

Cities are increasingly relying on IoT technology to become “smart”. IoT technology helps cities curb inefficiencies, fight rising pollution levels, and lift the quality of life of their citizens. IoT Analytics (IoT Analytics, 2023). surveyed key decision-makers from 50 cities around the globe on the details of their Smart City initiatives. IoT Analytics (IoT Analytics, 2023). surveyed key decision-makers from 50 cities around the globe on the details of their Smart City initiatives (Figure 2.14).

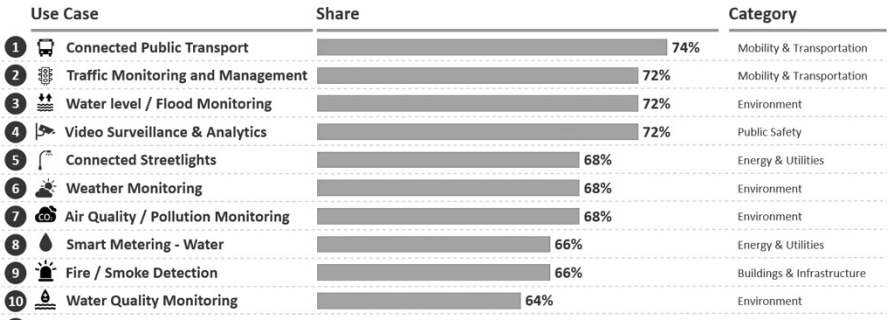


Figure 2.14 – The top 10 Smart City use causes (created by the authors on the base of IOT Analytics)

In conclusion, connected public transport tops the list at a 74% implementation rate. But we can also see that technologies that are used to improve the environment have a significant place at this top. For example, Water level / Flood Monitoring, Weather Monitoring, Air Quality/Pollution Monitoring, and Water Quality Monitoring.

The company IOT Analytics (IoT Analytics, 2023) researched the global growth of the IOT market (Figure 2.15).

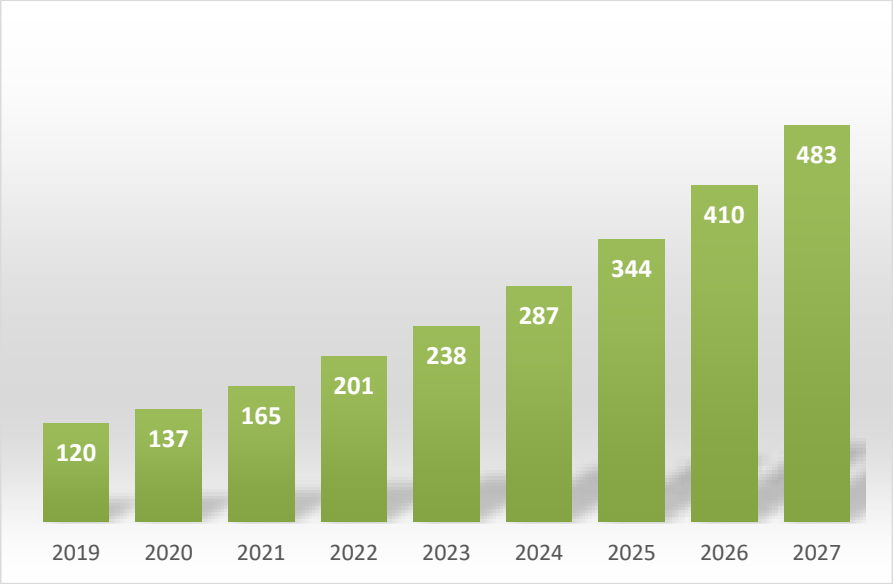


Figure 2.15 – Enterprise IOT Market, 2019-2027, USD Billion (created by the authors on the base of IOT Analytics)

The enterprise IoT market grew by 21.5% to $201 billion in 2022. IoT Analytics forecasts the IoT market size to grow at a CAGR of 19.4% to $483 billion from 2022 until 2027.

There are several reasons for the lower-than-expected growth of IoT enterprise spending. The three primary reasons are (IoT Analytics, 2023, Tadviser.com., 2023):

– lower GDP growth. According to the IMF, the growth of real GDP is going to be lower in 2023 than in 2022 for nearly all major world economies;

– sustained inflation. In January 2023, inflation has finally shown a downward trend. However, in most developed economies, inflation is still higher than in the last decade(s);

– high-interest rates. In the last year, central banks increased interest rates to fight inflation. The US Federal Reserve increased the federal funds target rate from 0.125% at the beginning of 2022 to 4.375% by the end of 2022. To fight inflation, other central banks followed suit (e.g., the European Central Bank [0%–2%] and the Bank of England [0.1%–3.5%]).

Based on the assessment of various technologies, techniques, strategies, and methods for the implementation of green IoT, relevant principles can make IoT greener. Below are some of the principles regarding green IoT (Zhu, et al. 2015, Alsamhi, 2019):

– the use of bioproducts in the production of G-IoT components and their ecological design;

– use of renewable green energy sources, such as solar energy, wind energy, water, oxygen, and geothermal sources;

– enable security mechanisms and data privacy in each component of the G-IoT system and the overall G-IoT system;

– develop more effective reduction recommendations for energy consumption in smart buildings. Politicians can have a direct impact on energy consumption and, as a result, a significant amount of energy can be saved;

– reduce the size of the network by efficiently installing nodes and using appropriate routing mechanisms, which will result in high energy savings.

The article discusses examples of Green IoT technologies and their impact on sustainable development. Analysis of recent trends has shown that people are increasingly interested in smart energy use and demand greater sustainability, reliability, convenience, personalization, and control in their cities through IoT technologies. For example, Water level / Flood Monitoring, Weather Monitoring, Air Quality/Pollution Monitoring, and Water Quality Monitoring. Digital technologies such as the Internet of Things and directly Green IoT are gaining popularity. The IoT market is growing every year and will become crucial by 2030. Green IoT will transform our lives into a greener and healthier environment in the future that is socially and environmentally sustainable, smarter, and safer.

2.10. GR GSCM: effect of procurement sustainability on reverse logistics

The sustainability concepts can trace its origin to forestry and was initially used for the first time by the then mining governor Hans Carl von Carlowitz. Brundtland Commission expounded sustainability as the way biological systems remain diverse and productive providing Long-lived and healthy wetlands and forests for sustainable biological systems as examples. According to World Bank (2005), Public Procurement is the acquisition of goods, services as well as works by a procuring entity using funds obtained from public coffers.

Green procurement or Sustainable procurement can therefore, be defined as the application of sustainable development principles in the procurement function. Sustainable procurement is not simply about being "green". Sustainable procurement is about socially and ethically responsible purchasing, minimizing the environmental impact through the whole process of supply chain, delivering economically sound solutions as well as always ensuring good business practice (CIPS, 2014). Sustainable procurement is a branch of the broad concept of sustainable development although its focus is far wider than just the development as it also aims at meeting the varied needs of all people in the current as well as future communities, promoting personal wellbeing, social cohesion, and inclusion, and creating equal opportunity (CIPS, 2014).

Sustainable procurement is about considering social and environmental factors alongside financial factors in making procurement decisions. It entails foreseeing beyond the traditional economic measures and making decisions based on the whole life cost, the associated risks, measures of success as well as implications for society and the impact on the environment. Making decisions in this line demands setting procurement into the broader strategic context including value for money, performance management, corporate and community priorities (CIPS, 2014).

A number of studies have been done in the field of green supply chain management and sustainable procurement all over the world. A great number of this research has been undertaken in the developed economies and a few in the developing economies although the research topic has generally attracted great interest in researchers in the contemporary society. Stephen and Walker (2007) international comparative study on sustainable procurement practice in the public sector reveals that a wide range of

sustainable procurement practices are embedded to some degree in public sector procurement practice around the world and that governments are widely using the power embodied in public procurement activities to further social, economic and environmental policy goals.

They however, agree that significant variation across countries in the extent and emphasis of sustainable procurement practices occur. Muraguri (2013) contributions towards sustainable procurement in Kenya cannot go unmentioned. His study was on the implementation of the preference and reservation regulation of 2011 and the focus was on state owned enterprises in Nairobi. Some of the study's recommendation was anchored in the operationalization of the regulation. In the contemporary world, with the advent of global economy and human cultivation, consumers and the society have higher expectations of companies. Businesses that are in the market for pursuing commercial profits exclusively cannot stand long. Big brands are no exception. Some of the traditional business concepts can no longer be used to solve problems encountered by the companies' today. Most companies are experiencing an increased variety of internal pressures caused by investors and employees and external pressures caused by legislators and customers to improve the social and environmental activities of their supply chains (Seuring and Muller, 2008).

In the modern society, a business that is exclusively driven by profit maximization motive without due consideration for its environmental impact has meager chances of prosperity in a sustainable future. Corporate leaders continue to be challenged by the issue of running competitive and profitable organizations while meeting broad social and ethical responsibilities (Morimoto et al., 2005). There is empirical evidence to the fact that the researcher seeks to bridge the gap as a justification of the study.

1. Procurement. It is a process of identifying and obtaining goods and services. It includes sourcing, purchasing and covers all activities from identifying potential suppliers through to delivery from supplier to the users or beneficiary. It is favorable that the goods/services are appropriate and that they are procured at the best possible cost to meet the needs of the purchaser in terms of quality and quantity, time, and location (Mangan, Lawani, and Butcher, 2008).

According to Soreide (2002) Procurement is the process of either purchasing or acquiring goods, services or works for an entity whether in the Public Sector or the Private Sector. Soreide (2002) in-addition stated

that, the many steps or the tediousness of the Procurement makes it very complicated. In his submission on the Kidd (2007) revealed that, procurement is a complex term because it involves everything that can be purchased or acquired. According to Ghana Integrity Initiative (2007), Public Procurement ―is the acquisition of goods and services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place for the direct benefit or use of governments, corporations, or individuals, generally via a contract‖. Moreover, the rationale for the implementation of Procurement system is to get value for money, increase efficiency and improve quality. In addition, Benslimane et al (2005) contend that the overall aim and objective of procurement is to carry out activities related to procurement in such a way that the goods and services so procured are of the right quality, from the right source, are at the right cost and can be delivered in the right quantities, to the right place at the right time. There are six rights in procurement and they can be achieved through following specific objectives of procurement by (Benslimane et al., 2005) are:

– to buy quality materials, items and services economically from reliable sources;

– to ensure timely delivery through the selection of capable and efficient suppliers;

– to continuously locate, evaluate and develop economical and reliable supply sources;

– to identify the most reliable sources of supply through either open tender, multi-stage tendering (pre-qualifying suppliers and retaining only those that are capable of meeting the organization‘s requirements; strategic sourcing) and limited tendering.

– to investigate the availability of new materials and monitor trends in market prices;

– to buy in accordance with organizations policies

Odhiambo and Kamau (2003) admitted that, procurement can be classified under two groups either public or private. Procurement is to purchase the right quality of material at the right time, in the right quantity, from the right source, at the right price. The main objectives of procurement include: supplying the organization with a steady flow of materials and services to meet its needs, to buy efficiently and wisely, obtaining by ethical means the best value for every money spent, to manage inventory so as to give the best possible service to users at lowest cost and protect the government‘s cost structure (Barley, 1994).

Public procurement can be described as centrally negotiated legal processes which are guided by political decisions and practically implemented by various local purchasers. It should be acknowledged that public procurement has both economic and social benefits, but the social benefits of public procurement are primarily seen as indirect positive effects from economic savings and environmental improvements (Berg, 2004). Procurement is a potential instrument of integrating socially and economically sustainable benefits to stimulate employment programmes. It includes planning, inviting offers, awarding contracts and managing contracts. For procurement to achieve its goals, it should follow these two principles: Professionalism and Value for Money (Economy). Professionalism is the discipline whereby educated, experienced and responsible procurement officers make informed decisions regarding purchase operations. The role of procurement professionals is critical to Ghana‘s economic development. It is in the recognition of this fact that the procurement Board‘s object includes; ―the professional development, promotion and support for individuals engaged in public procurement and ensure adherence by the trained persons to ethical standard. Value for Money (Economy): this is to secure a judicious, economic and efficient use of state resources at a reasonable cost. Value for money is not about achieving the lowest initial price: it is defined as the optimum combination of whole life costs and quality.

International experience suggests the following four basic principles upon which procurement system is based (World Bank, 2000).

– Maximizing economy and efficiency.

– Promoting competition and encouraging maximum participation by suppliers and contractors for the supply of goods, construction or services to be procured.

– Fair and equitable treatment of all suppliers and contractors.

– Transparency in procedures and minimizing opportunities for corruption and collusive activities.

2. Procurement sustainability. Sustainability has become a global topic. In the USA for example, most critics of Wal-Mart claimed that the entry of the retailer in their urban areas would lead to increasing social costs and externalities and the negative environmental impact the big stores would have such as an increase in traffic in nearby areas. Wal-Mart was accused by trade unions of paying low wages and forcing its employees to rely on government health programs (Dixon, 2006). Today, sustainable supply chain management has enabled Wal-Mart to reduce its operating

costs through waste reduction, streamlining business processes and long-term planning for its employees and the community at large to become the world's largest retailer (Walmart.com, 2012).

Sustainability concentrates on addressing present needs, thereby undermining future generations ' ability to meet their needs. The principle of sustainability consists of three pillars: economic, environmental and social, also known informally as income, the earth and people (Grant, 2020).

Sustainable Procurement is a "process of acquiring goods, works and services from a supplier that provides the optimum combination of whole life costs and benefits to meet the customer's requirements. It is a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, while minimizing damage to the environment (CIPS Knowledge Summary December 2008 issue, also see Greengage Consulting –Sustainable Public Procurement Policy, April 2004. p6, & Aurora Energy's Sustainable Procurement Policy Document version 3; September 2008)".

Sustainable procurement is about the process of purchasing goods and services that takes into account the social, economic and environmental impact that such purchasing has on people and communities. It is about considering what the products are made of, where they have come from, who has made them, how they are transported and how they are eventually disposed of (East Renfrewshire Council Corporate Procurement Strategy 2008-2011 p13 (Sustainable Procurement Policy)). Sustainable procurement means taking into account economic, environmental and social impacts in buying choices. This includes optimizing price, quality, availability …but also environmental life-cycle impact and social impacts linked to product/service's origin (PWC; 2010).

3. Procurement sustainability determinants. Most sustainability literature reveal three primary dimensions of supply chain sustainability; economic, social and environment (Kaufmann and Carter, 2008; Sloan,2010; Miemczyk, 2012; Winter and Knemeyer, 2013; Mann, et al., 2010; Closs, et al.,2010).

A. Economic Dimension of Sustainability. The economic dimension includes all profits earned by the members of the chain as well as the economic benefits realized by the host nations, regions and communities of those members (Sloan, 2010). It relates to the efficient use of resources, the

competitiveness and the viability of the sector as well as its contributions to the viability of communities. Efficient production structures, appropriate technologies as well as the diversification of income sources for agents are important elements of this dimension (European Commission, 2001). According to Votano, et al. (2004b), economically, sustainability means providing economic welfare with the future in mind. Harris (2000) states that an economically sustainable system must be able to produce goods and services on a continual basis; to maintain manageable levels of government and external debt and to avoid extreme sectorial imbalances which damage agricultural or industrial production. As a pillar, economic sustainability entails more than internal profits of the companies or agents involved in the network. Sloan (2010) distinguishes four main categories of economic dimension of sustainability as:

– Economic Performance: order fill lead time, product defect rate, transportation cost per unit, productivity and market value;

– Financial Health: profitability ratio, costs of goods sold and return on working capital;

– Market and Structure: degree of vertical integration, depth of supplier pool, breadth of customer base and market share;

– Institutions or Systems: regulatory compliance, standards certification and quality management system in use. Mahler (2007) cited in (Ho and Choi, 2012) confers that all activities that seek to promote profits, create jobs, attract customers, reduce costs, anticipate and manage long-term risks whilst fostering long-term competitiveness encapsulates economic sustainability. Economic sustainability is therefore used to identify various strategies that make it possible to use available resources to their best advantage. The idea is to promote the use of those resources in a way that is both efficient and responsible and likely to provide long-term benefits. In the case of a business operation, it calls for using resources so that the business continues to function over a number of years, while consistently returning a profit.

B. Social Dimension of Sustainability. Improving sustainability with respect to the social dimension involves developing and maintaining business practices that are fair and favourable to the labour, communities, and regions touched by the supply chain (Sloan, 2010). Social well-being encompasses improving labour standards and conditions, enhancing communities and creating and delivering socially responsible products and services (Mahler, 2007). Torjman (2000) states social sustainability to

include such key issues as poverty reduction, social investment and the building of safe and caring communities.

To this, Sloan (2010) expresses three categories of social dimension of sustainability;

– Work place/Internal Conditions: wages, employee contracts, healthcare, opportunities for career development, number of accidents and/or deaths per person-hour of work

– Community/External Conditions: product liability and healthcare benefits

– Institutions/Systems: supplier evaluation including social factors, hours of safety training per employee, regulatory compliance, health and safety management system in use.

To Schneider (2007), every decent social activity should not only aim at productivity but must also provide job security, respect for labour rights and workers‟ well-being particularly with information, consultation, social dialogue, union freedom, workers" health, collective bargaining and participation. It should also offer adequate incomes and must focus on social protection. Hence, social sustainability encompasses human rights, labour rights and corporate governance. A socially sustainable network is equitable, diverse, connected and democratic; with the aim of providing a good quality of life for members.

C. Environmental Dimension of Sustainability. Environmental sustainability involves making decisions and taking actions that are in the interests of protecting the natural world, with particular emphasis on preserving the capability of the environment to support human life (Miemczyk et. al., 2012). Environmental sustainability forces businesses to look beyond making short term gains and look at their long term impact on the natural world. It is therefore the maintenance of the factors and practices that contribute to the quality of the environment on a long-term basis. Environmental sustainability considers the physical inputs used in production (Kaufmann and Carter, 2010), emphasizing environmental life-support systems without which neither production nor humanity could exist. These life support systems include atmosphere, water, food, soil, minerals, materials and energy resources; all of which need to be healthy; their environmental service capacity needs to be maintained (Goodland, 1995; Sloan, 2010). Environmental sustainability is vital because the source capacities that support global life are large but finite. Overuse of a capacity impairs its provision of life support services; sustainability therefore requires that they are maintained rather than rundown. It is important to

strike a balance between the needs of a growing and changing population and the ability of natural resources to support this growth; sustainable environmental practices are needed in order to support smart growth. Hence, environmental sustainability is especially relevant for sustainability because it is the environment that provides humankind with the needed resources for its economic capital as a means to make ends meet. Therefore, for human beings to perpetually meet their needs, it will require that nature does not get depleted than it can regenerate.

4. Relevance of procurement sustainability to manufacturing firms. A review of existing literature can reveal that if implemented effectively, sustainable procurement has the potential to cut costs, shorten timescales, enhance stakeholder relationships, increase sales, reduce risks, enhance reputation and improve margins. Kennard M. (2006) indicates that benefits to an organization in adopting a Sustainable Procurement Policy are to:

– Control costs by adopting a wider approach to whole life costing

– Improve internal and external standards through performance assessments.

– Comply with environmental and social legislation

– Manage risk and reputation

– Build a sustainable supply chain for the future

– Involve the local business community

A bigger list of potential benefits sustainable procurement practices may have for an organization adopting such practices in its operations is availed as including;

– The existence of a defined procurement strategy and the value outcomes - the improved social, environmental and economic impacts

– Compliance with national and international sustainability standards and regulations

– To have a better understanding of risks in the supply chain

– Contributes to the sustainable organisational strategy

– Better commercial/economic decisions from understanding of issues that impact on the procurement decision (whole life cycle)

– Potential benefits in a long term relationship, innovation, better materials, alternatives, technical advice, emerging technologies

– If the objective is `grab the cash' it's not sustainable, build a more sustainable platform and achieve savings year on year

– Better quality of purchasing staff with more satisfying goals and improved performance

– Education of suppliers

– Much more proactive internal dialogue and challenge with demand side

– More effective evaluation of proposals and bids

– More ‘sustainable’ source of supply.

5. Reverse logistics. Reverse logistics comprises of the sector of supply chain that process anything returning inwards through the supply chain or traveling ‘backward’ through the supply chain. This can encompass anything from returned goods, inward disposal/recycling of packaging materials, the recycling/responsible disposal of materials from previously sold products, etc. According to the Council of Logistics Management, is the process of implementing, controlling, and planning the cost effective flow the point of origin (finished goods, raw materials, and in-process inventory. The flow is from the point of consumption (i.e. the consumer) to the point of origin (i.e. the manufacturer), to properly dispose of these or to recapture value. As the concept of sustainable development has been gaining momentum, so has the concept of reverse logistics. Companies use to tolerate returns; however today they are looking at reverse logistics as a new frontier which includes the handling and disposition of returned products and the use of related materials and information (Meyer, 1999).

The definition of reverse logistics can be viewed holistically to include the “process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or proper disposal”. (Rogers and Tibben-Lembke, 2001). Becoming proficient at handling returned goods not only improves relationships along the supply chain, the reduced costs improve profits and higher recovery rates are reached as efficiency is improved (Stock, et. al. 2002). Reverse logistics is increasingly becoming an area of organizational competitive advantage, making the pursuit of this function a strategic decision.

Traditionally, reverse logistics is an activity within organizations delegated to the customer service function, where customers with warranted or defective products would return them to their supplier. But, more recently, an environmental corporate management dimension with a focus towards remanufacturing, recycling, and reclamation have added vigor to this area of study and practice. Environmental regulations such as the European Union legislation which requires the recycling of one used tire for every new tire being sold by manufacturers operating in Europe are

forcing companies to address reverse logistics. The growth of E-commerce has also precipitated the need to be aware of the reverse logistics function. Customer returns average 6% across all retailers and 50% among internet sales (Managing Logistics, 2002). With the increasing growth of business-to-business and business-to-consumer avenues the traditional supply chain has been expanded. Along with the forward supply chain, the organization must consider the impact of reverse logistics. A company must be aware of how it manages, processes, transports, and stores returned goods. According to the Reverse Logistics Executive Council, United States firms spend more than an estimated $35 billion annually for handling, transportation, and processing of returned products (Meyer, 1999). This estimate does not include disposition management, administration time, and the cost of converting unproductive returns into productive assets. In the E-commerce arena, reverse logistics is a critical issue as buyers need to be assured of the validity of the return.

The cost of processing returns for Web merchandise last year was $2.5 billion, or twice the value of the merchandise itself. (Richardson, 2001). The strategic nature of reverse logistics reflects sustainable production in the three primary categories of economic, political, and environmental. Rogers and Tibben-Lembke (2001) examined the practices of reverse logistics and focused on the economic and supply chain issues relating to reverse logistics.

Few analytical models exist which assist in reverse logistics strategic decisions. Some models focusing on designing for disassembly and logistics network design using mathematical programming approaches have been proposed (Fleischmann et. al, 1997; Fleischmann et.al, 2000). Reverse-logistics strategy for end-of-life product take-back models were also developed to allow the user to determine the optimal amount to spend on buy-back and the optimal unit cost of reverse logistics. (Klausner and Hendrickson, 2000).

6. Importance of reverse logistics to manufacturing firms. Reverse logistics as important environmental dimensions and a few aspects dealing with value reclamation (Carter & Ellram, 1998). Reverse logistics can be of immense value in remanufacturing, repair, reconfiguration and recycling, which can translate to profitable business opportunities (Giunti&Andel, 1995; South, 1998). Reverse logistics also affords firms a huge opportunity to distinguish their roles from that of customers, and indicates how the handling of a company`s returns is often assessed by customers as an

important consideration, when a future purchase takes place (Daugherty, Myers, & Richey, 2002).

To these scholars, a well-planned reverse logistic system can promote long-lasting relationship for mutual benefits (satisfying needs of consumers and profit for the producers). In like manner, customers are more likely to patronise retailers who perform above other retailers on the handling of returns. Essentially, logistics is major factor that enhances a company`s achievements indifferent as aspects of business. It is widely acknowledged that reverse logistics plays a key role in a company`s performance and customer relations (Daugherty, Richey, Genchev & Chen, 2005). However, as pointed out by Autry, Daugherty and Richey (2001), it is often under-considered as a strategic option firms to gain economic and environmental benefits, with its strategic value neglected. Businesses' reluctance in executing reverse logistics program can be attributed the following: The traditional preoccupation of companies with limited logistics and the tendency to hide inventory mistakes are pointed out as potential factors that can hinder a company from committing substantial resources to reverse logistics. Another factor is inability to recognize areas where there are potential benefits (Daugherty et al.,2001; Saccomano, 1997). Moreover, Richey, Stefan and Patricia (2005) stated that physical process usually requires "a series of intricate multilayered steps" involving raising returns authorization, printing label, determining appropriate product handling and disposition, and organizing transportation.

In regard to this, Stock, Speh, & Shear (2002) reason that though reverse logistics is often viewed as "costly sideshow" to the regular business operations, it should receive much more awareness than it is now. It is also proposed that reverse logistics should "be seen as an opportunity to build competitive advantage".

2.11. Environmental basics of sustainability in tourism and hospitality

A specific feature of tourism as a branch of the economy is its significant dependence on the state of natural resources in a certain destination, therefore this field requires maximum attention to the issues of environmental protection. Climate change, the impact of man and industry on the environment and plastic waste can fundamentally change the situation and even destroy the tourist attractiveness of regions or even countries. Due to comprehensive informatization of society, many travelers

are already aware of the concept and goals of sustainable development and are increasingly concerned about the impact of their travels on the state of the environment. The problem of the development of environmentally safe tourism has become relevant not only for consumers of the tourist product, but also for destinations, state governments, local communities, and other stakeholders.

The Law of Ukraine "On Environmental Protection" (Verkhovna Rada Ukrayiny, 1991) characterizes environmental security as "such a state of the natural environment, which ensures the prevention of the deterioration of the ecological situation and the occurrence of danger to human health". However, environmental protection within the framework of traditional views, unfortunately, cannot fully solve the problem of harmonizing relations between human and nature. Ensuring environmental security requires not only nature protection and taxes or fines for the emission of pollutants, but also economic development based on innovations and scientific technologies, e.g., circular economy, as well as an extremely important new level of human perception of environmental problems and moral responsibility for them.

Accordingly, eco-friendly tourism can be defined as tourism that is based on sustainable travel practices and prioritizes safety for both the environment and tourists. Its main purpose is to protect the environment, including natural habitats and wildlife, from damage caused by human activity and at the same time satisfy the recreational needs of travelers (restoration of physical and mental strength, aesthetic pleasure from learning about the surrounding world, etc.).

Atmospheric air pollution, caused, in particular by transport emissions, also significantly affects the health of the population, because breathing is the basis of vital activity of any organism. As a result of constant and repeated effects on a person through the air, they are able to change the quality of life and the state of health of the population, even to an increase in the mortality rate, the appearance of genetic disorders, and the growth of oncological diseases (Medical Statistics Center under the Health Ministry of Ukraine, 2020; Kovalenko and Kornatskyi, 2019). Analysis of research results by Institute for Public Health named after O. Marzieiev (Makhniuk et al., 2020) on determining the role of individual factors in the formation of morbidity in the population, testified that the influence of atmospheric air pollution on the formation of morbidity in the population from the class of respiratory diseases can reach 40%, depending on age.

Environmental awareness also significantly affects the level of the population's sense of health. In general, as for 2021, 40% of surveyed adult residents of Ukraine rated their health as good or very good, 46% rated it as mediocre (neither good nor bad) or could not decide, and 14% rated it as bad or very bad (Novikova, 2020). Compared to 2020, the share of those who consider themselves healthy has significantly decreased (by 9 percentage points), and, accordingly, the share of those who rate their health as average has increased (by 8 percentage points). Health status can be influenced by various factors, including age, gender, level of material well-being, place of residence or other factors.

Environmental security, in particular in the field of services, is becoming one of the key elements of global security, and no one denies the fact that the environmental situation is worsening and the need for an effective policy to stabilize and improve it. The common dominant of the existing theoretical approaches to the issue of optimizing the interaction of society and nature is the recognition the fact of increasing anthropogenic load on the natural environment. As a result, it has been noticed a decrease in the assimilation potential of ecosystems that means a decrease in the level of their ability to self-renew. And if so, then only society can fulfill the function of the regulator in the "society-nature" system in the current situation.

The growing value of a healthy lifestyle and environmental awareness today is one of the determining factors affecting the functioning and development of medical and recreational institutions (Serdiuk and Kartashova, 2019). But, in addition, the consumer is concerned about preventive measures against disease and discomfort and is also characterized by an increase in responsible behavior towards the environment, striving to reduce plastic waste, concerning about animal welfare, the use of animal products in the food and cosmetic industries (Bieloborodova and Bessonova, 2022). Though it is worth noting that among the areas of tourist activity the most significant for this research are: economic mechanisms of nature use; environmental management in tourist transport and hospitality; the study of the EU experience in introducing the principles of circularity in tourist destinations management. Let's consider each of the mentioned directions in more detail.

1. Economic mechanisms of recreational nature exploitation in tourism.

Nature exploitation is the main form of interaction between society and the natural environment, which is implemented through a system of

measures aimed at the development, use, transformation, restoration and protection of natural resources. It reflects the connections between production, the population and the environment of the area. In the process of recreation, nature acts as one of the leading factors of rest and restoration of physical and neuropsychological well-being of a person (Arkhypova et al., 2022). The historical regularity of the interaction between society and nature is manifested in the expansion of human influence on the nature with the growth of economic development and the awareness of the need to preserve the natural environment as the basis of human existence.

Nature exploitation is the industrial and scientific activity of human aimed at the comprehensive study, development, use, transformation, restoration and protection of the natural environment. Unlike other established types of nature exploitation, recreational nature use is characterized by several specific features.

Firstly, the recreational economy is largely focused on the use of natural resources and, unlike most other branches of the economy, the products of which are transported to the consumer, in order to receive recreational services, the consumer must get to the location of the recreational resources, which causes significant tourist flows. Accordingly, the consumption of recreational resources occurs in the place of their localization and is not accompanied by their removal from the natural environment.

Secondly, natural resources are the leading factor that determines the recreational use of the territory: the organization of types and forms of recreational activities depends on what set of natural resources the territory possesses.

Thirdly, recreation has a leading role in the use of natural complexes and their elements that were not previously involved in the economic cycle (mountain areas, special landscapes, caves and cavities, geysers, waterfalls, underwater world).

Fourthly, recreation is a multi-purpose type of nature exploitation.

Meeting the requirements of different groups of recreationists, recreation industry makes different demands on natural complexes and optimally interacts with other types of nature exploitation. Summarizing the features of recreational nature use, it should be noted its inherent complexity, ubiquity and complementarity.

Based on a more general definition of the concept of nature exploitation, recreational nature exploitation acts as a rational use of natural resources to satisfy human recreational needs (Bulisheva, 2018). It is a

holistic process that combines the organization of recreational activities based on the use of natural resources and conditions, meeting the recreational needs of the population and preventing negative changes in the environment under the influence of recreational activities. Recreational nature exploitation has certain regional characteristics and should be estimated in the context of regional economic activity.

Recreational nature use is implemented through a set of activities related to the use of natural resources with the purpose of improving people's health, restoring their physical and psychological well-being, and expanding the ecological and cultural outlook. The main task of recreational nature exploitation today should be the study of the structure, dynamics and forecast of landscapes development - both natural and cultural in accordance with the interests of recreationists. Recreational nature exploitation is an integral part of the general nature exploitation system, which is based on considering socio-economic and ecological laws.

Recreational nature use can be defined as a field of theory and practice related to the search for optimal modes of use of natural resources for recreational purposes. At the same time, the functional model of recreational nature exploitation is concentrated around the natural complex. In this model, the natural complex, in contrast to the basic TRS (territory recreational system) model, is the central subsystem. The state of the natural complex is measured by such parameters as area, capacity, load (people/ha) and is characterized by specific properties – sustainability, attractiveness, reliability (Horoshkova et al., 2020). This functional model allows not only to systematize connections and relationships that exist between its subsystems, but also to use them in practical activities, for example, in the design and operation of recreational facilities.

Connections between natural complex and other subsystems are implemented through the management of the technological impact on the natural complex from the side of recreational enterprises and recreational infrastructure. This involves the development of environmentally efficient technologies for the construction of engineering network and communications facilities in recreational areas, the introduction of environmentally suitable technologies for the operation of accommodation facilities, transport, etc., as well as through legal and economic regulation mechanisms (Dikanov, 2019).

Management of recreational impacts on natural complexes involves improvement of recreation programs for recreationists and the development

of cycles of recreational activities in the direction of increasing their ecological efficiency (e.g. development of active types of tourism, nature excursions, ecological education for tourists and involvement in nature conservation activities during recreation), recreational improvement of the territory, functional zoning of territories, improvement of organizational, legal and economic regulation behavior of recreationists.

Management of household anthropogenic impacts on the natural complex involves the introduction and improvement of environmentally safe household technologies, reducing the share of human labor in maintenance, spreading self-service technologies, increasing the level of qualification requirements and criteria for selecting personnel of recreational facilities.

Management of industrial impacts on natural complexes and recreational resources involves improvement and implementation of modern waste-free technologies, evaluation and protection of natural recreational resources, rational territorial planning and implementation of a system of functioning paid nature exploitation.

Natural recreational resources are an indispensable condition for the development of recreation. Therefore, their rational use, restoration and protection is one of the important tasks. The selection of precisely these areas to improve the natural resource base of recreation is a necessary condition for both preservation and sustainable development of the recreational industry. It should be noted that these directions should be implemented consecutively and systematically, and their hierarchy is a necessary condition for obtaining the most optimal results.

The tasks of nature protection in modern conditions of the recreational activities development are:

– ensuring the rational economic use of resources, since the recreational economy is a leading branch of the modern economy and, like other branches of industry, is a consumer of natural resources and is one of the forms of nature management. Thus, nature protection is carried out to a certain extent for its rational use in recreation. Achieving rational use of natural resources in recreation should be based on the principle of sustainable development, which advocates for using natural resources in an amount that does not exceed the natural ability of their restoration or self-reproduction;

– provision of health care requests. Nature protection to maintain the necessary level of healthy natural conditions for human existence is caused by the growth of negative effects of industrialization, the growth of the

population and cities, and environmental pollution. Neutralization of this damage can go in two directions, which are not mutually exclusive. One way is the elimination or partial reduction of the negative factors of civilization, which requires significant capital investments due to the greening of production activities. The second way is the periodic improvement of the human physical well-being under the influence of natural resources, which in its essence coincides with the tasks of recreational activities;

– nature protection for the purpose of learning about the surrounding world and the development of science - dictated by the extinction of a number animal and plant species, their change under the influence of human, as well as the need for a more in-depth study of natural objects. The study of nature is also necessary in educational interests, to satisfy cognitive requests;

– the satisfaction of spiritual requests of a person in the beauty of nature: picturesque landscapes, the silence of the forest, the roar of a waterfall, the sea, the perfect forms of an animal or plant. Protection of natural beauty is an indispensable condition for the implementation of recreational activities. It is unthinkable without using the aesthetic qualities of nature and the soothing beauty of the natural environment;

– education through a sense of involvement in the fate of the entire planet, one's own responsibility to future generations of people and debt to "lesser brothers" - the animal and plant world. Nature conservation teaches a complex thoughtful approach to evaluating "good" and "bad", "harmful" and "useful", expands the outlook.

Thus, nature conservation pursues quite diverse tasks. Originated as one of the means of providing people with the basic necessities of life (food, raw materials for the production of clothing, construction material), products of the development of plant and animal diversity, nature protection is currently carried out to a large extent for the purpose of ensuring health care, satisfying scientific and cognitive needs , educational and aesthetic interests.

It is obvious that the recreational industry is interested in preserving the environment. Recreational requirements for the state of the environment fully coincide with the ecological needs of each person. At the same time, the massive uncontrolled development of recreation has recently caused significant damage to the natural environment. The threat to nature is, in particular, the development of tourist and recreational complexes and

related infrastructure; direct impact of recreationists, especially independent ones (e.g., trampling of plants, soil compaction, fires, etc.); technological processes in the recreational sphere (exploitation and depletion of recreational resources, their pollution, activation of adverse natural processes, etc.); provision of household needs of service personnel and recreationists.

Recreational load is an indicator of the direct impact of recreationists and the functioning of the recreational economy on natural complexes. It is calculated as the number of recreationists who visited a certain area of the natural complex during a unit of time. A distinction is made between the critical (which causes irreversible changes to the natural complex) and the maximum permissible (which is determined by the number of recreants that does not lead to irreversible changes to the natural complex) load.

Despite the complexity of the calculations, science has developed quite significant, albeit to a certain extent, contradictory material related to the methodology of determining the standards of recreational load on natural complexes. There are several methods of determining the recreational load on a certain territory, although none of them has a normative character. Norms of recreational load do not have sufficient clarity even for the same type of landscape. This is due to the fact that the stability of natural complexes depends on many interconnected natural factors, the season, and types of recreational activities. Therefore, reliable data on the criteria and indicators of permissible loads on one or another territory can be obtained on the basis of ecological (resistance of the natural complex to recreational loads), physical (direct physical demands on the natural complex), psychophysiological (requirements for the psychophysiological comfort of vacationers), comparative and analytical (analogy with functional structures studied in more detail) and experimental methods.

The recreational capacity of the territory will largely depend on the level of preparedness of recreational resources for their use for recreation (level of improvement), and the nature of the recreational process (organized or unorganized).

In the case of undeveloped territories, unpreparedness of recreational resources for use, spontaneity of the recreational process, permissible recreational loads and, accordingly, the recreational capacity will be relatively small, but the latter can be significantly increased under the condition of improvement and organization of the recreational process and is calculated as the projected recreational capacity.

Under the condition of improvement, the capacity of the territory can be increased several times compared to the natural capacity of the natural complex.

The development and implementation of measures aimed at correcting the behavior of vacationers in natural complexes is based on the principles of implementing various educational and educational activities – mass explanatory and propaganda work, education and acquisition of environmental knowledge, skills and abilities through tourism and excursions.

In the complex of educational activities, 4 types are distinguished: informative, educational, educational and propaganda.

For example, The International Ecotourism Society (TIES) has developed 10 commandments of an ecotourist for a deeper understanding of the tourist's behavior in the natural environment (TIES, 2020):

1) remember the vulnerability of the Earth;

2) leave only traces, carry only photographs;

3) to get to know the world to which he got: the culture of the peoples, geography;

4) to respect local residents;

5) not to buy goods from manufacturers that endanger the environment;

6) always walk only on well-trodden paths;

7) support environmental protection programs;

8) where possible, use environmental protection methods;

9) support (patronize) organizations that promote nature protection;

10) travel with companies that support the principles of ecotourism.

Economic instruments of nature protection are complemented by administrative and legal instruments and consist in choosing the best of the possible options for multi-purpose nature management.

Any natural complex can be used for various purposes of nature management (rural, urbanized, industrial), economic evaluation methods are used to find the optimal option.

Ukraine has a rich natural resource potential for the development of infrastructure for nature use and recreation. This is confirmed by the statistics of the green economy, which is expressed in the area of the green zone of Ukraine and is shown in figure 2.16.

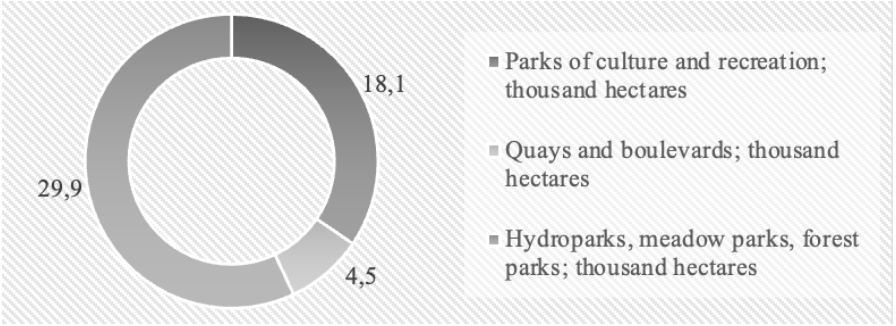


Figure 2.16 – Green zone area in urban ecosystems of Ukraine in 2021 (formed by the authors on the basis of Ministry of Development of Communities and Territories of Ukraine, 2021)

Likewise, the best available technologies and practices should be applied in the recovery process. Now it is very important to focus on the preservation of ecosystems, national parks, nature reserves. In the cities of Ukraine, green spaces are located on an area of 4.6 thousand km² (38.4% of urban areas), and they are available for general use on an area of 1.6 thousand km² (13.4% of urban areas). In Ukraine, the actual figure on average green spaces per city resident is 16.3 m² (Ministry of Development of Communities and Territories of Ukraine, 2021). According to international norms (UNDP, 2019), this indicator should be no less than 21 m².

Natural recreational resources are an indispensable condition for the development of recreation, especially daily recreation, which is carried out in urban conditions. The main subsystems and areas of improvement of the natural resource base of recreation are shown in figure 2.17.

Highlighting these areas of the natural resource base of recreation improvement is a necessary condition for both preservation and sustainable development of the of the specified sphere. It is also worth mentioning that these directions should be implemented systematically and consistently, and their hierarchy is a necessary condition for obtaining the most optimal results.

Another instrument of nature protection is paid nature exploitation, based on a fee for the use of natural resources for recreational purposes, which is implemented at two levels: the first is the level of recreational enterprises that make deductions for the use of natural recreational resources, and the second is consumers who pay for the provision of

general and special recreational services that are produced using natural recreational resources and territories.

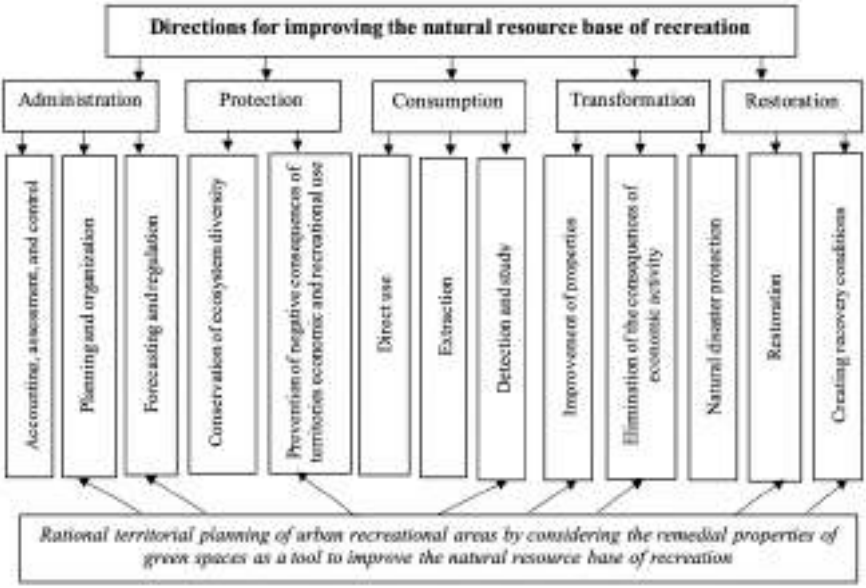


Figure 2.17 – Subsystems and directions for improving the natural resource base of recreation (formed by the authors on the basis of (Bulisheva, 2018; Tymchuk et al., 2021))

For example, according to the Resolution of the Cabinet of Ministers of Ukraine "On approval of the list of paid services that can be provided by budgetary institutions of the nature reserve fund" (Cabinet of Ministers of Ukraine, 2000) payment is provided for the following services:

I. Services that can be provided by institutions of the nature reserve fund in accordance with their functional powers:

1. Services related to ensuring the implementation of recreational activities on the territory of the institutions of the nature reserve fund: excursions along marked routes, ecological trails, to exhibitions, to museums, ecological and educational centers, the founders of which are the mentioned institutions; excursions to karst caves.

2. Organization and implementation of educational and environmental protection events.

3. Services related to scientific and research activities on the protection, reproduction and rational use of natural resources, conducting expertise and laboratory analyses.

II. Services that can be provided by institutions of the nature reserve fund in the field of economic activity:

1. Services related to the creation of conditions for organized tourism, rest and other types of recreational activities in natural conditions with observance of the regime of territories and objects of the nature reserve fund: short-term rest; amateur (sport) fishing; walks (trips) by bicycle, on horses; hunting, etc.

2. Photo services, services for conducting video, film and television filming by citizens and organizations within the territories of the institutions of the nature reserve fund.

3. Transportation of tourists, vacationers; use of parking lots, wharves (berths) belonging to institutions of the nature reserve fund.

4. Accommodation, accommodation and food for tourists and vacationers.

5. Advertising and publishing activities and other services.

The fee for the provided services is differentiated depending on the qualitative and quantitative state of recreational resources, their prevalence, value, uniqueness, scarcity, efficiency, possibility of restoration, accessibility, complexity, productivity, cost and share of expenses related to the maintenance of the facility.

Undoubtedly, the influence of recreation and tourism on the ecological situation of all regions of the world is growing. But thanks to the steady growth of profits and the scale of this activity, the increase of investments, the attraction of new labor resources, the expansion of the range of additional services, the recreational economy receives a new impetus for development, which at the same time leads to the strengthening of the ecological safety of the visited regions, since an ecologically safe environment has long been one of the criteria for choosing a place of rest. With rational organization, recreational activities can provide financial support for nature protection and increase the importance of those natural objects that should be preserved in their original form. For example, on the border of environmental, economic and social problems, the concept of ecological tourism emerged as one of the important means of sustainable development of natural territories.

It is also necessary to note the experience of Austria in the field of application of economic mechanisms for nature management. The relevant

law was adopted by the Austrian parliament as part of the eco-social tax reform. According to the document (Austrian National Emissions Trading System, 2022), from July 1, 2022, the government introduces a tax on CO2 emissions for fuels used in the heating and transport sectors at the level of €30/t with a gradual increase to €55/t by 2025. These are the areas that are not covered by the European market for greenhouse emissions trading (EU ETS). To reduce the financial burden on the population, each citizen will receive a climate bonus of up to 200 euros every year. The bonus rate depends on the ability to use public transport. For example, in Vienna, the rate is the lowest and reaches 100 euros, and the further into the countryside, the higher the compensation.

Overall, the law aims to encourage people to choose environmentally friendly modes of transport and heating by raising the prices of more expensive carbon-efficient options without increasing the overall tax burden. The plans include cutting income tax, some health insurance levies, and taxes on companies, especially in energy-intensive industries that will be hardest hit by the new CO2 tax, from 25% to 23% by 2024. By 2025, the tax reform is expected to bring aid to individuals and legal entities in the amount of 18 billion euros.

In Ukraine, from January 1, 2022, tax rates on CO2 emissions increased by 200% from UAH 10/t to UAH 30/t (EcoPolitic, 2022). Last time, the carbon tax was raised in 2019 from UAH 0.41/t to UAH 10/t, but it was not possible to achieve positive results - according to the results of the same year, greenhouse gas emissions decreased by 2%. The whole problem is that the funds from the payment of the eco-tax on CO2 emissions in Ukraine have no intended use and are dissolved in the State Budget.

2. Environmental management in tourist transport.

Before the pandemic, the travel and tourism industry (including its direct, indirect and induced impact) accounted for 1 in 4 of all new jobs created in the world, 10.6% of all jobs (334 million) and 10.4% of world GDP (9 .2 trillion US dollars). Meanwhile, the expenditures of international tourists in 2019 amounted to 1.7 trillion US dollars (6.8% of the total export, 27.4% of the world export of services). However, after the beginning of the COVID-19 crisis, the borders were closed, the hotels closed, and air transportation fell sharply. The number of international tourist arrivals decreased from almost 1.5 billion in 2019 to approximately 380 million in 2020, a 74% decrease (Eurostat, 2022). This represents a

loss of approximately 1.3 trillion US dollars in international tourism spending.

Since 2010, world tourist flows have grown by almost 50%, increasing on average by more than 5% per hour. Although tourism growth is projected to continue, key factors such as changing demographics, improved connectivity, technological innovation, and the need for sustainable and inclusive approaches are likely to transform the sector by 2040. Thus, the tourism industry is an important consumer and/or user of materials, energy, and other resources. In 2018, passenger transport, accommodation, as well as food and beverages accounted for more than half of the total volume of domestic tourism consumption (domestic and inbound) in OECD countries (World Tourism Barometer, 2020).

However, even before the pandemic, all major operators of the tourism sector were already facing increasing pressure from visitors and governments demanding accountability, accounting and reducing the impact on natural and social ecosystems. For example, sustainable consumption should be encouraged in the pan-European region, as biodiversity loss and ecosystem degradation continue, caused mainly by increased land use changes, agricultural intensification, urbanization, and habitat fragmentation. In addition, due to the pandemic, the pressure on consumption has increased, and not only on the part of tour operators, but also on the part of travelers, as they prefer more environmentally friendly destinations and domestic consumption. For example, in 2020, the consumption of domestic tourism in OECD countries was 75%, while the consumption of international tourism was only 25% (UNWTO, 2022).

It is impossible to ignore the consequences of the criminal russian military aggression in Ukraine on the international tourist market. This has exacerbated already high oil prices and transport costs, increased uncertainty and caused travel disruptions in Eastern Europe. At the moment, the most affected destinations (except Ukraine) are the Republic of Moldova, where the number of flights has decreased by 69% since February 24, 2022 (compared to the level of 2019), Slovenia (-42%), Latvia (-38%) and Finland (-36 %) according to (Eurostat, 2022).

Despite the conflict, European air traffic grew steadily. Airline bookings also show increased demand for travel within Europe and for flights from the US to Europe. The easing of travel restrictions is helping to normalize travel (most of EU countries have lifted all travel restrictions related to COVID-19), but the conflict remains a serious threat to recovery. The military offensive risks hampering the return of confidence in global

travel. This may particularly affect the US and Asian outbound markets, especially for travel to Europe, as these markets are historically more risk averse.

Many environmental consequences of tourism activities are related to the construction and management of infrastructure, such as roads, ports and airports, as well as tourist facilities. Tourism development and poorly managed facilities have led to soil erosion, increased air, soil and marine pollution, loss of natural habitat and increased pressure on endangered species, as well as other consequences. The rapid growth of both international and domestic travel, the growing tendency to travel longer distances in shorter periods of time and the preference for energy-intensive modes of transport, accommodation and activities have increased the energy dependence of tourism and the contribution of this sector to climate change. Currently, tourism accounts for 4.5 Gt of CO2-eq. per hour, and tourism is considered one of the fastest growing sectors of the economy.

Within the framework of tourism activities, the transport sector, including air, road and rail transport, generates the largest share of tourism-related emissions, which is 75%. Air quality represents the largest environmental risk for the health of the population of the European region with a disproportionately strong impact on children, the elderly people and poor strata of the population. Greenhouse gas emissions from tourism related to transport are estimated at 5% of all anthropogenic emissions. The lack of travel as a result of the COVID-19 pandemic had a positive effect on air pollution. However, transport initiatives on recovery plans are crucial to prevent the resumption of ecological loads as a result of the activities of various vehicles. For example, policy packages such as those supported by the European Transport and Health Program (Directive 2011/24/EU, 2011) can promote the development of public transport in combination with walking and cycling as part of urban and ecotourism routes. People at large can enjoy their activities without using personal cars, but at the same time remain fully mobile, which makes mobility soft (environmentally clean and sustainable). Proper planning and management in the field of tourism and transport, as well as in other related industries, are crucial for successful recovery For example, the improvement of technologies and operations can increase the fuel efficiency of transport if it is stimulated. Both sectors (tourism and transport) must combine energy efficiency with a rapid phase-out of fossil fuels. Additional policy measures are needed to stimulate changes in technology, operations, use and demand for fuel.

Transport accounts for a quarter of greenhouse gas emissions in the EU, which continue to grow. To achieve climate neutrality, transport emissions must be reduced by 90% by 2050, and all modes of transport must contribute to this. Shaping sustainable transport means putting users' interests first and providing more affordable, healthier and cleaner alternatives to their current mobility conditions. Figure 2.18 shows the structure of greenhouse gas emissions by types of transport in the EU, as of 2021.

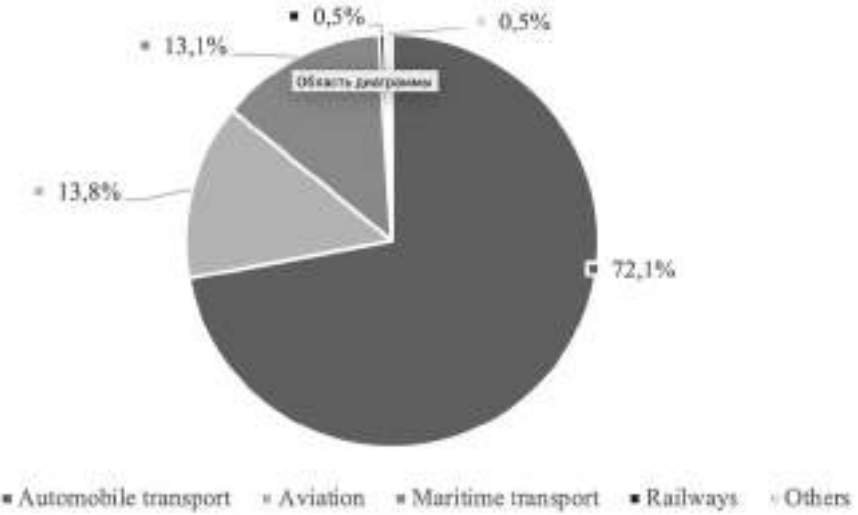


Figure 2.18 – Greenhouse gas emissions by transport sector in the EU, 2021 (European Environment Agency, 2022)

Consequently, the tourism industry contributes to climate change especially by means of carbon dioxide emissions (due to both the transportation of tourists and of the products necessary to satisfy their needs once arrived at their destination), as well as the use of non-renewable energy for various installations (liquid and gas fuels being used for the preparation of domestic hot water, central heating, technological steam for professional washing/ cleaning services, cooking and accommodation etc.)

In Ukraine, the situation with atmospheric air pollution by mobile sources is quite tense. In addition to carbon dioxide, a number of substances harmful to the population and the environment are also accounted for (table 2.21).

Table 2.21 – Air emissions from mobile transport means in 2018-2021 (Ukrstat, 2022a)

Type of the pollutant	The number of pollutant emissions, tons						
	2018	2019	Growth rate, %	2020	Growth rate, %	2021	Growth rate, %
Total	**1612895.1**	**1648827**	**2.23%**	**1436728.3**	**-12.86%**	**1546775.5**	**7.66%**
sulfur dioxide	18647.2	19803.2	6.2%	18168.8	-8.25%	19643.3	8.12%
carbon monoxide	1230612.4	1255224.6	2%	1084752.5	-13.58%	1164872.7	7.39%
nitrogen dioxide	170367	178778.1	4.94%	161780.8	-9.51%	174420.4	7.81%
nitrous oxide	792.4	798.6	0.78%	798.8	0.03%	895.8	12.14%
non-methane volatile organic compounds	162806	162622.1	-0.11%	141730	-12.85%	155079.2	9.42%
ammonia	7.1	6.3	-11.04%	6.8	7.66%	7.8	14.71%
methane	5000.5	5128.4	2.56%	4909.9	-4.26%	5246.5	6.86%
soot	24662.5	26465.7	7.31%	24580.7	-7.12%	26609.8	8.25%

The data show that carbon monoxide is the “leader” among pollutants (1.165 million tons by the end of 2021). Its main source is the transport with internal combustion engines, since this substance is formed as a result of incomplete combustion of fuel in the engine. Carbon monoxide is a highly toxic compound that can persist in the air for up to 5 years. In Ukraine in 2021 there were an average of 245 cars per 1,000 inhabitants, of course, most of them are built on the basis of internal combustion engines, which is why the level of emissions is so high and continues to grow due to the increase in the number of such vehicles. If in 2018-2019 it is observed a 2% increase in carbon monoxide emissions, then in 2020 there was a decline (by 13.58%) caused by the COVID-19 pandemic, when the operation of public transport was also significantly limited, and the number of private trips, business activity also decreased. But in 2021, a significant part of the covid restrictions began to be relaxed, then it is observed the growth of carbon dioxide emissions by 7.39%.

The growth rates through 2021, the sharp increase in nitrogen oxide emissions of 12.14% in 2021 against 0.78% and 0.03% in 2019 and 2020, respectively, is cause for concern. This substance also enters the air from the exhaust gases of vehicles. It is believed that nitrogen oxide is 10 times more dangerous than carbon monoxide and is one of the factors of the greenhouse effect. This compound very easily penetrates the lungs and blood, and since it is poorly soluble in water, it also penetrates into the lower respiratory tract. This is especially dangerous for children and sensitive people with asthma. In order to reduce such emissions, some car manufacturers have started using the denoxtronic exhaust gas cleaning system that makes it possible to significantly reduce the content of nitrogen oxides. With the help of an SCR catalytic converter, harmful nitrogen oxides are converted into water and nitrogen. Unfortunately, this system has not yet gained such popularity and is installed only on new car models.

By comparing 2018 and 2021, it is mentioned a noticeable decrease in emissions of non-methane light organic compounds from 162.8 thousand tons to 155.1 thousand tons. As a rule, such compounds include alcohols, aldehydes, alkanes, aromatic hydrocarbons, ketones and their halogenated derivatives Perhaps this decrease is related to the fact that since 2018 in Ukraine it was forbidden to sell fuel lower than the Euro-5 standard, the quality of fuel has become somewhat better, therefore it is noticed a decrease in volumes for certain emission positions. However, after the introduction of martial law in February 2022, the government temporarily allowed the use of Euro-3 and Euro-4 fuel standards in Ukraine, so it is possible to predict a significant negative impact of this decision on the level of emissions in 2022-2023.

According to the volume structure by region, the highest growth rates in 2021 are demonstrated by Zakarpatska, Odeska, Lvivska, Chernivetska and Ivano-Frankivska oblast' (table 2.22).

Since the emissions data are calculated based on the fuel sales report in a particular region, it can be concluded that the increase in emissions in these areas is caused by the increase in travel. The number of trips in these regions is influenced by the following factors:

– 4 out of 5 leading regions are border regions, that is, part of the transport is transit, which fills up at local gas stations before or after crossing the border;

– all 5 regions have a certain popularity among tourists, so it is obvious that many travelers visit these regions in their own cars;

- there is a demand for public and sightseeing transport, which mostly uses internal combustion engines.

Table 2.22 – Growth rates of pollutant emissions into the air from mobile transport means by regions of Ukraine in 2020-2021 (Ukrstat, 2022b)

No. in the rating	Region	2020		2021	
		The number of pollutant emissions, tons	Growth rate, %	The number of pollutant emissions, tons	Growth rate, %
1	Zakarpatska oblast	33325.5	87.6	39761.5	119.9
2	Odeska oblast	81178	86.9	94516.7	117.3
3	Lvivska oblas	72052.5	85.4	83599.7	116.7
4	Chernivetska oblast	19171.2	88.7	22079.4	116
5	Ivano-Frankivska oblast	33090.2	89.8	37904.3	115.3
...	…	…	…	…	…
23	Donetska oblast	51491.4	91.2	51334.1	100.8
24	Zaporizka oblast	71398.6	89.4	69333.9	98.6
25	Volynska oblast	31669.2	101.4	30821.4	97.7

Donetska, Zaporizka and Volynska oblast showed the lowest growth rates. However, it is worth noting that the level of emissions in Zaporizka and Donetska oblast is already consistently high, 69.3 thousand tons and 51.3 thousand tons, respectively. In Volynska oblast' this indicator is much smaller – 30.8 thousand tons in 2021. Of the three regions indicated, Volynska oblast is the smallest in terms of area (20,144 sq. km.) less fuel and lubricants are sold, therefore the level of emissions is not so high. The reduction of environmental pollution should, of course, affect the tourist attraction of the region.

But at the same time, regional tourism departments or DMOs should publicize such ecological advantages so that potential tourists know about them.

Separately, it is considered the situation with emissions of pollutants, which has already formed in the Dnipropetrovska oblast. Figure 19 shows a graphic representation of the rate of growth of emissions of pollutants into the atmosphere from mobile sources of pollution in the region in 2015-2021.

Figure 2.19 – Growth rates of air emissions from mobile sources of pollution in the Dnipropetrovska oblast' in 2015-2021 (Ukrstat, 2022b)

Starting from 2017, emissions into the atmosphere began to increase (except for 2020, when the COVID-19 pandemic began and there was a decline in travel and transportation). This can be explained by the fact that the "Europcars boom", which began in the western regions back in 2015-2016, reached Dnipropetrovska oblast closer to 2017. Subsequently, in order to stop the sending of such non-customs-cleared cars for foreign registration, during 2017-2018, lawmakers adopted a number of changes to the legal framework regarding customs clearance and preferential conditions for importing used cars into Ukraine.

Of all types of transport operated in Ukraine, electric transport is the most environmentally friendly. This type of transport can include the railway (but only the part that uses electric traction), the metro, trams and trolleybuses. Unfortunately, the statistical reporting does not distinguish separately the passenger flows of trams and trolleybuses and refers them to ground (road) transport, which, in turn, includes road transport (Figure 2.20).

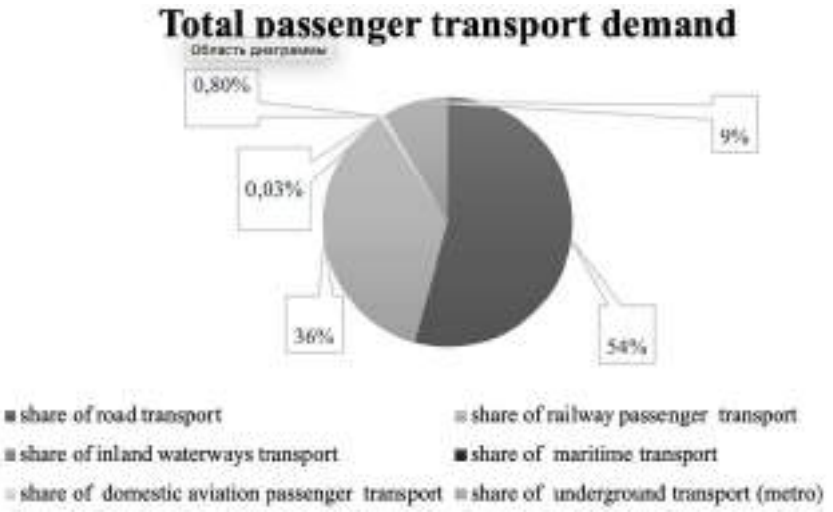


Figure 2.20 – The specific weight of different types of transport in the total passenger traffic in Ukraine in 2021 (Ukrstat, 2022c)

However, in Ukraine there is an increase in the popularity of road (car) transport. This is especially noticeable in 2020, when passenger railway transportation did not function at all due to the pandemic for several months, while the share of road transportation increased to 63% (passenger traffic – 24,037.6 million passenger-kilometers).

In order to achieve the goals of sustainable development, it is necessary to develop railway passenger transportation. JSC "Ukrzaliznytsia", which is actually the only operator of this service in Ukraine, despite some positive developments, still has many problems.

According to the Law of Ukraine "On Railway Transport", which was adopted in 1996, the acquisition of railway rolling stock for the transportation of passengers is carried out in accordance with the established procedure at the expense of the State Budget of Ukraine. Therefore, for a long period of time such financing was not carried out, only in 2020, for the first time, funds were allocated for the purchase of new passenger cars. According to "Ukrzaliznytsia", passenger transportation is unprofitable and all previous years of its activity it had to be subsidized at the expense of profits from freight transportation. That is why so few new wagons and trains were purchased. There is also a large debt of local budgets to the railway for the transportation of preferential

categories of passengers. The problem is that, due to the imperfection and lack of transparency of accounting for such passengers, "Ukrzaliznytsia" sometimes issues unreasonable bills that most local budgets are unable to pay.

"Ukrzaliznytsia" still uses outdated approaches when developing train schedules. For example, there are trains that depart only on even or odd dates. A large number of railway sections are still not electrified, so "Ukrzaliznytsia" has to use diesel locomotives, a large part of which were produced back in the 70s and 80s and, of course, there is no mention of any Euro-5 or Euro-6 environmental standards for them.

Maritime and river transport is the least popular in Ukraine, although it is quite promising from a tourist point of view, but for the development of the passenger segment in our country is paid very little attention. It should be noted that this type of transport is also considered a polluter of the environment, because in most cases it also uses fuel from petroleum products.

An important aspect from the point of sustainable development in tourist transport sector is also the task of ensuring the availability of trips for all segments of the population. The national strategy for creating a barrier-free space in Ukraine for the period until 2030 sets quite serious tasks for the transport industry, namely:

– preventing the allocation of funds from the state and local budgets for the purchase of equipment, the purchase of vehicles and the payment of services or works that do not provide for inclusiveness and/or do not meet the principles of sustainable urban mobility;

– stimulating the production by domestic enterprises of vehicles, special and auxiliary equipment for the transportation and movement of people with reduced mobility;

– establishment of technical requirements for accessibility to public transport. Inclusion of the accessibility requirement in the technical specification for public procurement of vehicles, as well as in the licensing conditions for enterprises that carry out passenger transportation;

– ensuring the purchase of railway passenger cars that will meet accessibility requirements, as well as equipping the existing rolling stock with auxiliary means of ensuring accessibility;

– standardizing the requirements for the accessibility of landing sites in state construction regulations, as well as ensuring the design and construction of landing sites in such a way that allows groups of the

population with reduced mobility to independently enter and exit from and to low-floor transport units.

So far, urban transport in large cities is the best adapted to the needs of low-mobility population groups: according to statistics for 2021, 66.5% of the total number of trolleybuses and 63.9% of tram cars can be used for trips by such population groups. The situation is somewhat worse in Ukrainian subways - only 36.1% of cars are adapted. And only 15.3% of buses used as public transport can accommodate passengers with reduced mobility.

The worst situation is in railway transport (table 2.23) – 9.26% of the rolling stock is adapted for the transportation of low-mobility population groups.

Table 2.23 – Number of rolling stock by mode of transport at the end of 2021 (Ukrstat, 2022d)

	Total	of which	
		adapted to the needs of persons with disabilities and less mobile groups	% of the total by mode of transport
Rail coach	6975	646	9.26
of which:			
passenger trains	3692	15	0.41
electric trains	2535	576	22.72
diesel trains	618	37	5.99
high-speed trains	130	18	13.85

Unfortunately, most of the passenger cars currently in use on Ukrainian railways were manufactured back in the 1980s and 1990s, when the state was not very interested in accessibility issues, and therefore such requirements were not specified in the technical specifications. However, after the adoption of the new strategy, the situation should change for the better. The problem lies not only in the carriages themselves, but also in insufficient adaptability of stations and boarding platforms. So far, a certain changes in solving these problems at the stations of large regional centers are observed. Among the future tasks is the gradual transfer of all railway transport to a low-floor format, as it is done in the EU.

3. Environmental management in hospitality.

In the 21st century, business sustainability has become more relevant than ever, because the issues of climate change and the need to make responsible management decisions are becoming more acute every year. This also applies to the field of tourism and the hotel and restaurant business, the functioning of which should be based on the principles of sustainable development. Business management should be conducted in such a way that the achievement of economic, social and environmental goals does not harm and allows the preservation of basic natural processes, biological diversity, life support systems and cultural identity for future generations. That is why more and more enterprises in the HoReCa sector are paying attention to various approaches that allow to prevent or minimize the negative impact of their activities on the environment. Among such approaches, one of the most popular are the environmental management systems and zero waste concept.

Regarding the carbon footprint of global tourism, it should be noted that although the transport sector is responsible for 49% of carbon dioxide emissions in 2021, the other half of emissions are almost entirely directly or indirectly caused by the hospitality industry (figure 2.21).

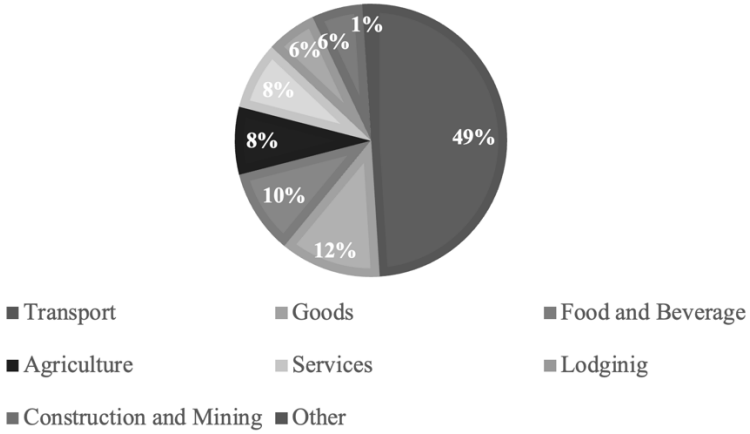


Figure 2.21 – Carbon footprint of global tourism, by sector, 2021 (Sustainable Travel International, 2022)

This applies to agriculture, which supplies products for restaurants, and construction, in particular buildings for the hospitality industry, and the service sector.

During the last decades, there have been significant changes in the mentality and attitude of society towards the environment. The result of the world community's efforts to prevent and control environmental pollution, the implementation of environmental protection measures, and the use of environmentally friendly technologies was the adoption of the Declaration on the Environment in 1992 at the UN conference in Rio de Janeiro. In 1993, the International Organization for Standardization ISO created the Technical Committee TC 207 "Environmental Management", whose task was to develop a system of standards for environmental management. An important result of TC 207 was the adoption in 1996 of five ISO standards of the 14000 series, which contained the composition and description of the elements of the environmental management system, guidelines for their application, as well as guidelines for the implementation of environmental audits. The ISO 14000 series standards have already been revised twice by the ISO international organization: in 2004 and 2015.

In Ukraine, according to the order of the State Enterprise "Ukrainian Research and Training Center for Standardization, Certification and Quality Problems" dated December 31, 2015 No. 221, DSTU ISO 14001:2015 "Environmental Management Systems" has been in effect since July 1, 2016. Requirements and guidelines for application" (ISO 14001:2015).

Achieving a harmonious combination of the environment, society and sustainable development is considered a necessary condition for meeting the needs of the current generation without harming the ability of future generations to meet their needs. Societal expectations for sustainable development, transparency and accountability have evolved alongside increasingly stringent legislative initiatives, increasing pollution pressures on the environment, resource inefficiency, waste management, climate change, ecosystem degradation and biodiversity loss.

This prompted the organization to adopt a systemic approach to environmental management, implementing environmental management systems to promote the environmental component of sustainable development. The purpose of the ISO 14001 standard is to provide organizations with a general scheme of activities for environmental protection and response to changes in environmental conditions in a balanced combination with socio-economic needs. The standard establishes requirements, the fulfillment of which enables the organization to achieve

the planned results that it has determined for its environmental management system.

Tourist managers agree that private hotels and restaurants still have a leading role in implementing environmental technologies, compared to corporations and chains. This is explained by several factors (Purcidonio et al., 2020).

There is no network standardization in private hotels. Here, the manager is their own boss, they do not need to coordinate their decisions with the central office, so any initiative immediately enters the development stage. In the network, hotels are more like a bureaucratized state, where the implementation of a new technology requires going through the 9 circles of hell to agree on all issues and standardize the new procedure.

Private hotels are usually newer and smaller, so new initiatives are easier to implement in private establishments. Obviously, new hotels are already being built with environmental standards in mind, and the developer has a choice of what materials to use and how to train their workers. The concept of the establishment can immediately include environmental standards, and the hotel can position itself on the market taking into account its own attitude to the environment. It is more difficult for hotel chains that have existed since the 30s of the 20th century to jump to a new level and follow global trends, because renovation requires not only funds from the hotel budget, but also support from the main offices at the regional (and sometimes global) level. In addition, any change can affect the company's profits, so not all chains are ready to close their profitable hotels for renovations or bother guests with innovations that are often not aligned with the philosophy of the hotel's concept. In addition, conceptual changes may not always find a positive response among customers, so chain hotels are less dynamic in introducing new ideas and trends (Bieloborodova and Bessonova, 2022).

Private hotels often cooperate with public organizations, including environmental ones. Chain hotels have contracts with major business players, while private hotels focus on local companies and public organizations. That is why eco-hotels are common in small local chains, eco-resorts or in isolated cases when the hotel management sets itself the goal of introducing modern eco-technologies.

Nevertheless, some large hotel corporations aim to change the order of things, so they are developing concepts for the sustainable development of their networks. There are many examples, but it has been highlighted the

top hotel brands that give an exceptional role to the environmental component of hotel service.

1. 1 Hotels. This is a chain of hotels in the USA (Miami, New York, Los Angeles), which uses only ecological materials and considers promoting a careful attitude to nature as the purpose of its existence in the field of hospitality. The modern rooms are decorated with wood and fitted with natural light, hemp mattresses and living greenery. The network has a powerful communication with its guests, who value naturalness combined with sophistication, high quality wellness services and responsibility for the environment along with careful waste processing.

2. Hyatt Corporation. The Hyatt Corporation is one of the leaders in the world market of hotel services, having more than 850 hotels around the world and uniting more than 15 brands with its own concept and purpose of existence. When thinking about such a big business shark, sustainable development and environmental friendliness definitely do not come to mind. However, the company's management tries to keep up with the times and stay ahead of its competitors. The Hyatt Thrive corporate platform has been operating since 2011. Every April, the team of each of the 850 hotels in the chain prepares projects that provide environmental, educational or social support to the city in which the hotel is located. The 2020 Strategy for Environmental Sustainability, which focuses on reducing waste and water and involving stakeholders in environmental projects, was also adopted. The corporation has a high CRS (sustainable management tools) rating compared to similar hotel chains, which gives it an absolute advantage for the further implementation of eco-initiatives. One cannot but rejoice at the representation of the corporation by a hotel in the heart of the capital, Hyatt Regency Kyiv, which successfully implements programs and new standards of the hotel chain.

3. Accor Hotels. The Fairmont, Raffles and Swissotel chains have recently joined this corporation. In addition to this news, Accor's Planet 21 program has been adopted. The main provisions are aimed at improving staff qualifications, attracting hotel guests by implementing innovations of local companies and working with communities. The introduction of ecological cosmetic products and an emphasis on the quality of local food and drinks are also priorities. The Accor Hotels chain is also represented in Ukraine – by the exclusive Fairmont Grand Hotel 5* Kyiv.

4. Sandos Hotels. This is a chain of all-inclusive resorts located in the most luxurious corners of the world from Monaco to Cancun. The

company’s motto is "to be the leader of all-inclusive resorts that are innovative, sustainable and different from the rest." Well, well said, considering that Sandos Hotels are taking steps in this direction. In addition to the focus on historical and cultural heritage and community development, the company also focuses on such environmental programs as recycling, careful water consumption, and saving electricity. In 2009 the Sandos Eco Club was established, which is a multidisciplinary group for the implementation of eco-practices in hotels around the world, including programs to save endangered species, hotel landscaping and "green" guest rooms, which fully comply with environmental standards and allow to reduce the volume of use of carbon dioxide by 70%.

However, for small and medium enterprises (hereinafter SMEs) in the hospitality industry, following the ISO 14001 can be too complicated. At the initial stages of greening, it may be appropriate to use a simplified environmental management system (hereinafter SEM).

Simplified SEM is an appropriate solution for SMEs ready to green their activities. This approach implies adjustments, taking into account the specific needs of a particular SME and taking into account other factors that the enterprise faces in its current activities. A simplified SEM usually includes several stages/levels that allow the enterprise to obtain official recognition of compliance with the relevant requirements.

The main elements of a simplified SEM are as follows:

Level 1: Foundation of environmental processes: demonstration of management commitment; conducting an initial assessment; development of environmental policy; determination of applicable requirements of environmental legislation; definition of other environmental norms (codes of activity, industry standards, contractual requirements); classifying of all the requirements for breakdown by type of activity; analysis of the actual level of compliance; development of operative control procedures for elimination of non-compliance with the requirements.

Level 2: Sustainable environmental program: assessment of aspects and impacts; specification of the environmental policy; definition of goals and target indicators of environmental activity; development of indicators of environmental activity; definition of specific environmental management programs (definition of functions, terms and resources); development of a personnel training program.

Level 3: Implementation of a full-fledged SEM: completion of the internal environmental management system; adoption of clearly defined methods of internal and external information interaction; implementation of

documentation and accounting mechanisms; adoption of internal audit procedures; review and notification of the audit results, etc.

1. A company that wants to get a green certificate needs to choose a level that optimally corresponds to its current activity. As a preparatory measure, the enterprise is recommended to conduct a self-assessment. Instructions for the self-assessment should be posted on the website of the green certification system. Applicants are required to send a completed application form (available online) to the Accreditation Board.

2. After paying the annual participation fee, the application must be evaluated by the accreditation board. The applicant must be informed about the trainings being held (in particular, about the dates and places of their holding).

3. An auditor appointed by the Accreditation Board is sent to assess the performance indicators of the applicant enterprise and check whether all the criteria of the specified level have been met. The certificate must be issued within one month from the date of the audit. The audit report must be posted on the website of the green certification system.

4. Within the first three years after certification, enterprises participating in the system must undergo an annual audit. Subsequently, the audit should be conducted every three to five years. At the same time, the enterprises participating in the system must prepare and send to the accreditation council an annual report on the fulfillment of the certification criteria.

To achieve the goals of balanced environmental management in Ukraine, it has been summarized the most effective and practically oriented initiatives that can be implemented in domestic hotel and restaurant business (Makarenko et al., 2019; Bieloborodova et al., 2021; Kalchenko et al., 2021).

1. Processing of solid waste. Unbelievable, but the fact is that sorting is the first step on the way to sustainability. In developed countries, this is already a normal practice not only in enterprises, but also in everyday life. The answer is that there are not enough enterprises in Ukraine that can recycle paper, plastic, glass, etc. However, the more quality sorted material there is, the sooner suitable enterprises will appear that will not only take care of the environment, but also bring profit to the owners. It is worth recalling the shocking numbers - ordinary office paper decomposes within two years, tin cans - 10 years, foil and batteries - more than 100 years, plastic bottles - 180-200 years, aluminum cans - 500 years and glass for

1000 years. These numbers are already a good reason to sort, and hotels, as large complexes through which thousands of people pass each year, have great leverage. One of the trending initiatives is the replacement of plastic room key cards with paper and wooden counterparts, which are actually not only green but also aesthetically pleasing.

2. Environmentally friendly cosmetic and chemical agents. Many hotels in Ukraine equip the rooms with cosmetic products, and also use many chemical products for cleaning and laundry. Therefore, hotels have the right to choose high-quality ecological cosmetic products for their guests. There are many brands that do not use sulfates, which not only pollute water, but also have a negative effect on people's skin. Ideally, you should also pay attention to whether products are tested on animals. In order to reduce the use of washing powders and water, many hotels in Ukraine already place information cards so that guests can regulate the need to change bed linen and towels. In this, properly built communication with the guest is the real key to success.

3. Responsible attitude to food quality and its proper disposal. One of the elements of sustainable development is the support of local brands, which in the hotel industry is reflected in cooperation with food and beverage suppliers. In general, the food industry in Ukraine is developed and you can buy almost any product locally, except for certain delicacies (red and black caviar, seafood, some types of meat). But in this point, it is worth emphasizing the correct disposal. Composting is not widespread in Ukraine, but in hotels and restaurants, it is one of the best investments in the processing of organic waste. Compost tanks come in various sizes, are airtight and provide processing of organic waste of plant and animal origin. Paper napkins can also be recycled along with organics. The price in Ukraine is from 2,000 hryvnas and above, depending on the manufacturer, size, etc.

4. Energy saving technologies. Energy-saving technologies are also widely available in Ukraine, so their implementation is quite acceptable. First, automatically turning on and off the lights in the premises not only reduces the electricity bill but is also a manifestation of careful use of resources. Also, the installation of solar panels, especially in the southern regions of the country, has long been an economically justified investment.

5. Guests' attitude towards eco-initiatives. Without the support of guests, any hotel will never be 100% sustainable. Communication and interaction of the staff is a key point in the work of any hotel. Currently, there is a widespread practice of the "paperless guest" in the world -

reducing the use of paper per guest by implementing electronic signatures on registration cards, sending invoices to e-mail instead of a printed copy and providing all the necessary information through mobile applications, websites and e-mail. The attitude of guests to food consumption is changing - at “all-inclusive” resorts they actively promote taking as much food as you can really eat. No, not because it’s a pity or because the hotel wants to save money, it’s just hard to imagine how much waste remains after a 200-room buffet hotel. Sometimes this figure reaches 500 kg of organic waste per day. In addition, hotels are inventing new features to provide guests with clean water - coolers on the floors, refillable glass bottles, etc. The main thing is to be creative and meet the requirements of customers.

Another popular approach to eco-initiatives in the hospitality industry is the zero waste concept, which is an ethical, economical, efficient and visionary goal to get people to change their lifestyles and practices and to support sustainable natural cycles where all discarded materials are converted to become resources that can be used by someone else.

In terms of business application, the concept of zero waste can be characterized as the development and management of products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, the conservation and recovery of all resources, rather than their incineration or landfill.

Zero waste is based on 5 key principles (5R) (Mohan et al., 2017):

1. Refuse. The point is not to buy too much and to abandon products that harm the environment.

2. Reduce. It means reducing the consumption of certain goods.

3. Reuse. It means that many things can be given a second life, which significantly reduces consumption and emissions.

4. Recycle. This principle calls for collecting garbage (plastic, glass, paper) and handing it in for recycling.

5. Rethink. It insists on the awareness that the basis of human actions should be conscious consumption.

Is it realistic to apply these principles in the hotel and restaurant business? Let’s consider several examples of effective implementation of the zero waste concept by various accommodation and public catering establishments.

In 2015, the management of the Warsaw Novotel Centrum hotel (part of the AccorHotels network) analyzed that the hotel's annual waste amounts to about 40 tons. Then it was decided to introduce a system that would control kitchen waste. The Winnow system, which Novotel started using, is based on the basic principles of zero waste and shows which waste is generated the most, where it comes from and how to reduce it. In the first three months since its introduction, the hotel was able to reduce kitchen waste by 67%. In general, monitoring showed that half of the waste is generated in the restaurant hall, i.e., from hotel guests (uneaten meals, leftovers), and half in the kitchen (skin, cut parts of vegetables and meat, etc.). Thanks to new kitchen and buffet management methods, Novotel has reduced organic waste by 54% in a year and a half.

The Green House Hotel, located in the British city of Bournemouth, also uses some interesting strategies to reduce waste and minimize environmental pollution: all food waste is composted; the hotel's service cars run either on electricity or on biofuel made from waste cooking oil from the kitchen; only environmentally friendly cleaning products and recycled toilet rolls are used. In addition, The Green House has its own garden, from which the harvest is used for cooking, and other products are purchased from local farmers to reduce emissions during transport. All the paint used in the hotel is produced by Farrow & Ball, located 15 miles outside the city. The products of this company are among the most environmentally friendly paints available anywhere in the world. Unlike many other manufacturers, they continue to use natural ingredients, such as linseed oil and Chinese clay, and do not use harmful ammonia and formaldehyde.

The Nolla restaurant in the capital of Finland even reflects the zero waste philosophy in its name, because the word nolla, in translation, means zero. This establishment uses environmentally friendly tableware and containers made from recycled materials, for example, the drinking glasses are recycled bottles from the Presidential Palace. To reduce waste, Nolla works with partners who deliver products in reusable plastic containers, and for deliveries from farmers, uses boxes that are then returned and reused for subsequent deliveries. The restaurant's menu is designed on the basis of seasonality and is optimized in such a way that visitors do not order a lot of food. Customers are served a tasting set of four or six dishes, while ordering individual dishes is not provided. In addition, chefs control the use of ingredients, all of which help the restaurant reduce waste. At the end of each day, the food not finished by the visitors is loaded into the

composter. The restaurant returns compost to small local producers who supply the restaurant with seasonal products.

In Ukraine, the zero waste concept continues to be implemented by Premier Hotel Dnister (Lviv). The hotel supports a number of environmental initiatives, in particular, handing over waste for recycling, making booklets for guests from recycled materials, organizing bicycle rental, participating in "Earth Hour". Chefs offer guests Ukrainian organic food for breakfast and master classes on products of Ukrainian producers. Premier Hotel Dnister also encourages conscious consumption among its customers in other ways, for example, by offering them to change bed linen and towels not every day. The hotel's near-term plans also include landscaping technical floors, holding "waste-free" conferences, introducing reusable tableware for desserts, and installing separate containers for organic waste. In July 2022, at the initiative of Zero Waste Alliance Ukraine, the project "Implementation of zero waste principles in the hotel and restaurant business of Ukraine for its adaptation to the requirements of the Paris Climate Agreement in the conditions of russian invasion" has begun. Within the framework of this initiative, a number of consultations were held with representatives of the hotel and restaurant business of the Lviv region regarding the transition to a low-carbon mode of activity, the issue of "Zero Waste Business" certification was considered, and a typical climate strategy of a hospitality business establishment was developed.

Implementation of the concept of zero waste in HoReCa establishments is a complex and lengthy process. The main and most difficult thing to do is to change the psychology of owners, managers, employees and customers in order to demonstrate the importance of environmental issues. But in the future, such changes will bring a number of advantages: the image of the business in the eyes of visitors and society in general, reducing costs from reducing consumption, increasing competitiveness in the service market, as well as ensuring the health of future generations.

4. Experience of environmentally safe tourism in the EU.

Climate change is a central aspect for promoting circularity and sustainability in the tourism sector. According to the UN World Tourism Organization (UNWTO) and the International Transport Forum (ITF), emissions from tourism activities may increase by at least 25% by 2030.4 The UNEP/UNWTO report on the green economy states that under the usual development scenario by 2050 energy consumption in tourism will

increase by 154%, greenhouse gas emissions by 131%, water consumption by 152%. For example, tourism is very vulnerable to climate change, as extreme weather events, loss of biodiversity and damage to assets can lead to increased insurance costs and security issues. The Paris Agreement and the Sustainable Development Agenda for the period up to 2030 serve as a guide for countering the consequences of climate change.

Given the high population density, the nature of Europe has undergone the most noticeable changes as a result of anthropogenic activity (Cortinovis et al., 2018). Therefore, the member states of the European Union are trying to actively promote the development of ecotourism in their territories. Let's consider several cases.

Portugal. In January 2019, the Portuguese government expanded the conditions of investment visas for foreigners. This program existed before and provided for the granting of residence permits to citizens of non-EU countries for investments in certain sectors of the economy. However, this time, changes were made to the program, which has already received the unofficial name "green visas". Now Portugal provides a residence permit in exchange for an investment of 500,000 euros in environmental projects. They can include organic agriculture, renewable energy, any project that reduces carbon emissions and, most importantly, ecological tourism (Flaherty, 2019).

Several environmental initiatives are already implemented in the country. Any tourist who cares about environment can join them. In Lisbon, the local non-governmental organization Brigada Do Mar (from port. - sea brigade) is successfully operating, which has removed 901 tons of garbage from the beaches of Portugal over the past few years. In this way, every tourist can not only help with the cleaning of the coast, but also learn a lot about the garbage pollution in the area from commercial fishing vessels and how to fight it.

There are currently many eco-facilities for accommodation in Portugal. Among the most successful, Monte Velho Eco Retreat can be singled out in one of the coastal areas of the Algarve. At one time, Monte Velho began with the idea of reforesting 30 hectares of land. It is now a full-fledged retreat center that grows its own fruit and vegetables and uses renewable energy sources.

Denmark. Copenhagen plans to become the best cycling city in the world by 2025. This goal is also an integral part of the city's health and environmental protection plan – to make the city CO2 neutral by 2025 and increase its livability (Koglin, 2015).

The success of Denmark and Copenhagen is that the bicycle is seen as a full-fledged urban transport, not as a pastime. In 12 years, 14 new bridges were built in the capital region, which made it possible to integrate bicycle routes into a single transport system as much as possible. The city ensures that people can easily take their bikes to the station and board the train. This encourages tourists to travel on bicycle routes not only in Copenhagen, but also throughout Denmark. There are even specialized cycling guides, which list all the routes around the country, and also indicate free places to spend the night in a tent.

Finland. In the Arctic region of the country, the climate is warming three times faster than in the rest of the world. Many of Finland's tourism products and services depend on weather conditions, making them highly vulnerable to climate change. Protection of the main asset of the country makes sense from a financial point of view (Sustainability Leaders United, 2021). Therefore, the Finnish government focused its attention on the principles of sustainable tourism, which was recorded in the National Development Strategy for 2019-2028 and in the STF program - Sustainable Travel Finland.

In the framework of the STF, information activities are carried out among potential consumers of the tourism product, in which people are encouraged to use rail or sea transport for travel, to use bicycle routes and walking tours, explain the advantages of hospitality establishments that have eco-certificates, emphasize the need to use local and seasonal food products, etc. The development of tourism sustainability indicators is also ongoing, among which a pilot project – a carbon footprint calculator – can be highlighted.

France. The country's government also strives to reduce its carbon footprint by developing a model of environmentally conscious tourism. Thus, in April 2021, a new climate bill was approved, which aims to support the ecological transition, helping France to reach the target level of emissions of 40% by 2030 (Atout France – France Tourism Development Agency, 2022).

To achieve such ambitious goals, a number of changes related to travel and leisure have been initiated. For example, an agreement in principle was reached regarding the prohibition of short domestic air flights between cities connected by rail (journeys lasting less than 2.5 hours). Initially, this will only apply to the routes between Paris (Orly) and Nantes, Lyon and Bordeaux, and the geography of such bans will be expanded

later. In mid-2022, a new procedure for assigning stars to hotels and other accommodation facilities was introduced. Among the 243 criteria by which hotels have been evaluated, special attention is paid to sustainable development, among the mandatory requirements: training staff in energy-saving management, measures to conserve water resources and waste disposal, sorting garbage for guests, environmentally friendly cleaning products, informing guests about transport with a low impact on the environment, measures to reduce the amount of laundry, etc.

The concept of slow tourism is gaining popularity in France, which calls for taking one's time during the trip, but getting aesthetic pleasure from contemplating the scenery while walking or from the window of a train or from aboard a boat, if river transport is used. As one of the elements of such tourism, the use of bicycles is actively developing, because about 20,000 km have already been arranged in the country. bicycle paths. The effectiveness of French projects in the field of sustainable tourism is confirmed by the fact that in 2022 the city of Grenoble became the green capital of Europe.

Unfortunately, environmentally safe tourism practices are developing too slowly in Ukraine. Often, the initiative to use the principles of sustainable development comes precisely from the owners of hospitality establishments and individual enthusiasts, but there is a lack of support from the state. However, in the process of adapting the Ukrainian economy and legislation in the field of tourism and environmental protection to the norms and practices of the European Union, everything should change for the better. It is already necessary to study the world and European experience of safe interaction between man and nature in order to attract investments in "green projects", including ecotourism, in the post-war period. It is also worth paying attention to the information policy in order to educate people to understand, respect and preserve the environment, in accordance with the goals of sustainable development.

As for environmental security in the modern context, it is worth mentioning the humanitarian aspects of the issue in its various dimensions (spiritual, cultural, moral, etc.). They are, as a rule, determined by the level of environmental consciousness of the society, which is formed under the influence of many factors, and primarily through upbringing, education and traditions. Under the influence of these and other factors, the environmental mentality of the nation is gradually formed, which enables society to develop through sustainability.

2.12. The importance of environmental competence enhancement in achieving the sustainable development goals

For more than one year, the world community has been warning about the catastrophic consequences of modern environmental problems that require immediate solutions. Air and water pollution, global warming, degradation of natural resources, deforestation and natural disasters are all the result of human activity. Solving these problems will require considerable efforts in many areas, while they affect everyone. Eco-activism is considered one of the involvement forms in social or political campaigns aimed at preventing environmental damage. Eco activists can be considered any people who do something extra to preserve nature from the destructive influence of human activity and care about the awareness of others on this topic (Savchuk, 2018).

A consumer survey conducted by Mastercard (2022) as part of the Priceless planet coalition program showed the prerequisites, changes and prospects of the 23 countries population attitude to the environment as a result of the two-year-long COVID-19 pandemic. (Fig. 2.22-2.23).

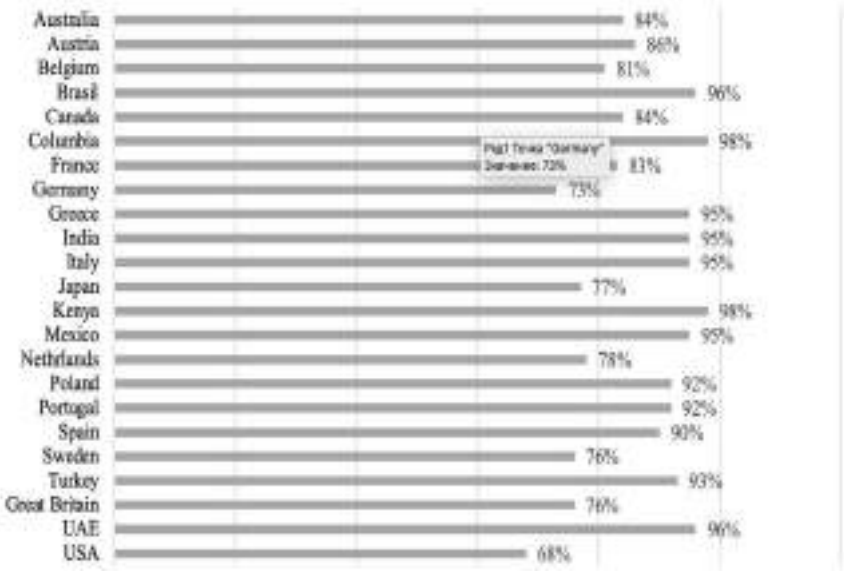


Figure 2.22 – More attentive respondents to their impact on the environment

Fig. 2.23 demonstrates that it is the coverage of the ecology and sustainable development problems in the info space that has caused a change in opinion about the environment, since humanity spends 50% of its leisure time on the Internet.

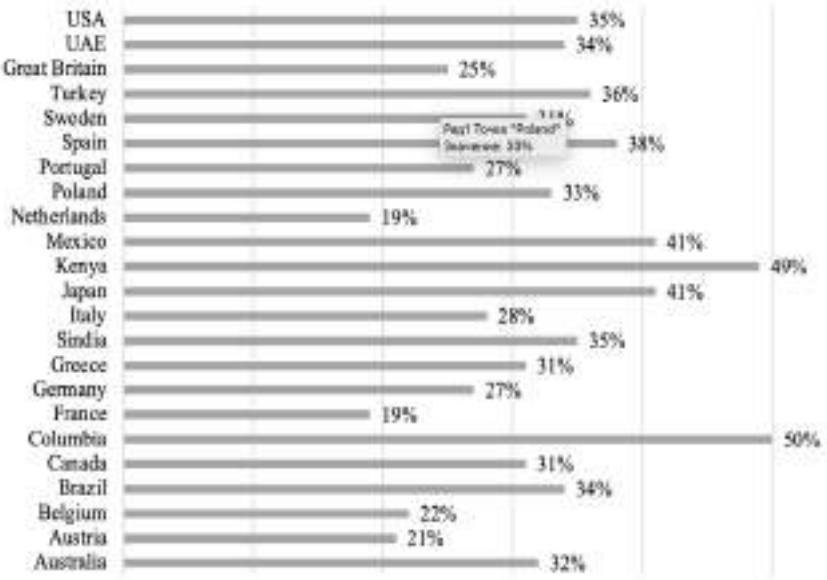


Figure 2.23 – Highlighting the problems of ecology and sustainable development in the info space is the main reason for changing the opinion about the environment

The growing level of environmental concern and increased consumers awareness in the world is supported by the following statistical data (Kim, 2022):

1. According to a survey conducted by Mastercard (2022), 42% of consumers became more aware of their purchases, and 58% are aware of their impact on the environment.

2. According to WWF, between 2016 and 2022, the number of searches for environmentally friendly products on Google increased by 71%.

3. 24% of respondents want to stop cooperation with brands that do not have sustainable plans for the future.

4. According to NBS research, consumers want to pay an average of 10% extra for socially and environmentally conscious products.

5. 57% of McKinsey survey participants have already changed their lifestyle to reduce their environmental impact after the COVID-19 pandemic.

6. 91% of surveyed from the generation Z (born after 2000) want personally participate in actions against climate change.

7. Social networks increased the level of humanity awareness about problems in the environment by 30% in two years COVID-19 pandemic.

8. Since 2016, there has been a 45% increase in the number of food, cosmetic and natural pharmaceutical companies that committed to protecting biodiversity in their supply practices.

9. 81% of consumers worldwide believe that companies should do more to protect the environment, according to The Conference Board's Global Confidence Survey.

The current ecological situation of Ukraine regions and on the planet as a whole requires the including in the structure both of the professional specialist competence and the civil person competence (Liubarets, 2017) of an ecological component that would allow timely finding the correct ones (from the minimal risk point of view to human health and environmental quality) solving problematic environmental situations in professional activity.

In the end of 2018, CEDOS analysts (Verbytskyy I., Pyrohova D., 2019) commissioned the Ukrainian Youth Climate Association with the support of the Heinrich Böll Foundation Representative Office in Ukraine to conduct a sociological study. They studied how Kyiv residents perceive environmental problems and what their level of awareness is. The purpose of the conducted research was to find out: how three social groups perceive the main environmental problems of the Kyiv city, their causes and possible solutions; what environmental behavior they want to practice and how they can contribute to improving the environmental situation (Table 2.24).

The results of the survey showed that students and people aged 18-35 with active experience are the most knowledgeable, but opinions were clearly divided regarding the causes of environmental issues among the formed and interviewed focus groups (Fig. 2.24).

Table 2.24 – Results of environmental issues research and conscious behavior of Kyiv residents ((Verbytskyy & Pyrohova, 2019)

Focus group of research	Environmental issues	Environmental issues reasons
1. Students aged 17-25, not involved in the public organizations work 2. Married people aged 25-40, half of whom have children 3. People aged 18-35 with activism experience	1. Garbage. Among all the problems, the research participants most often mentioned the irregular garbage removal, city streets and green areas clogging, the lack of infrastructure for sorting and the lack of waste incineration plants.	Culture, indifference and low awareness are the causes of environmental issues. Married people and activists drew attention to the problem of excessive consumption, calling it "greed" or "materialism." Students emphasized the need to promote ecologically conscious behavior: "Many people are not literate in environmental terms. They don't monitor what they throw away, how much they throw away."
	2. Air quality. Air pollution, smog and air pollution is another problem that was mentioned by the research participants.	Absence of state policy. The participants attributed this to corruption, the lack of an effective punishment system, the lack of the necessary infrastructure for sorting and processing garbage, poor-quality work of communal services, as well as the lack of support for environmental initiatives. They also mentioned the reluctance of business to introduce new environmental technologies. In all groups, there was a discussion about which of these reasons is primary and more important: the lack of proper state policy or everyday practices in society.
	3. Other problems mentioned by the research participants are deforestation, low drinking water quality, and climate change.	Environmental behavior: Waste management at home; Reduction of plastic consumption; Buy coffee in your thermal cup; Use a private car less, use public transport and bicycle more; It is possible to install a device for collecting air quality data; Buy or use used clothing or items; Choose a train or bus instead of a plane; Pay extra for energy saving when buying new appliances; Insulate houses, install heat meters, use energy-saving lamps, adjust the temperature in rooms; Partial ban on the entry of private diesel vehicles into the city center.

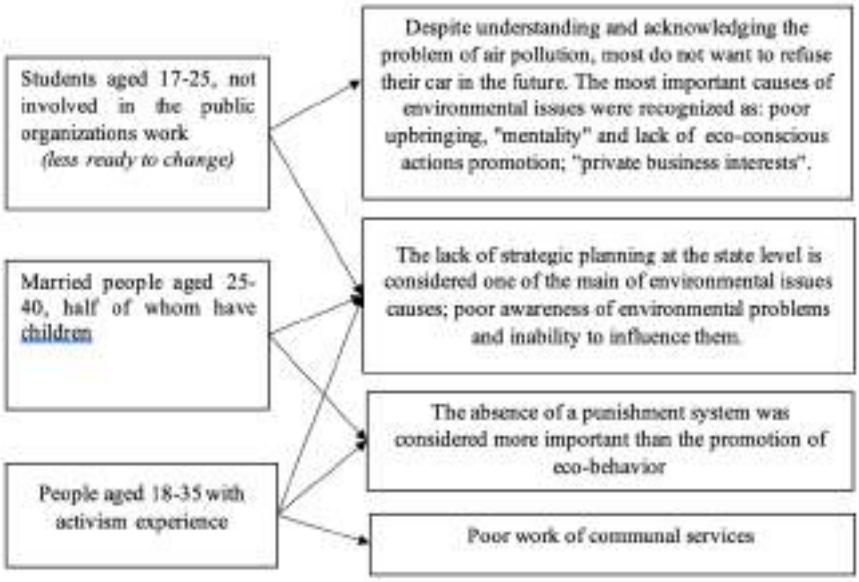


Figure 2.24 – Survey participants opinions regarding the most important causes of environmental problems (developed by the authors based on (Verbytskyy & Pyrohova, 2019))

The authors of this monograph section conducted a survey among Lviv Polytechnic students to determine the awareness level of their actions impact on the environment. The research results showed that the Internet and social networks take leading positions (100%) among the sources from which respondents receive information about environmental problems, initiatives, and impact on the environment; second place – study and personal communication with friends; the last position is taken by television (it was possible to choose more than 1 answer option, Fig. 2.25).

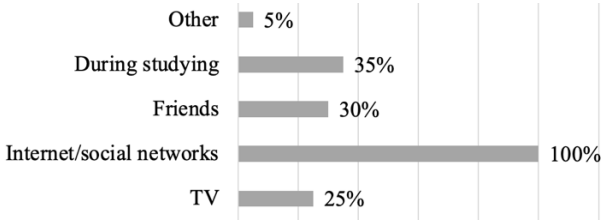
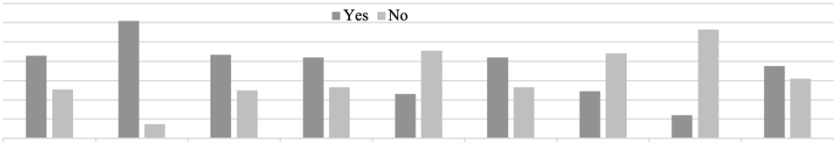


Figure 2.25 – The information source about environmental problems, initiatives, impact on the environment, etc.

If we talk about the environmental habits and initiatives that students practice in their everyday life, the results of the survey indicate a growing level of awareness and understanding of their impact on the environment. Most of the respondents save energy resources, sort garbage, minimize plastic consumption and carefully plan purchases, buying only what is necessary (Fig. 2.26).



	Waste sorting	Resource saving (electricity, water, etc.)	Minimizing plastic consumtion	Giving things for recycling/charity	Observing composition of the product/packaging	Carefully plan my purchases	Prefer more environmental public transport	Participating in the city's environmental initiatives	Purchasing second hand goods
Yes	86	122	87	84	46	84	49	24	75
No	51	15	50	53	91	53	88	113	62

Figure 2.26 – Environmentally friendly actions and initiatives practiced by students in everyday life

Each person interacts with the environment, in particular by consuming natural resources, products made from them (manufactured goods) or using them (food). In addition to the resource's consumption, the environment state is affected by human professional activity, because there are no professions that do not affect the environment state. The difference is only in volumes, characteristics and methods of influence. The maximum reduction of the negative impact on the environment during professional activity is a sign of a professional environmental competence high level. Therefore, increasing environmental competence is an important factor in minimizing environmental problems. Competence is «the ability of an individual to act competently» or «the ability to successfully respond to individual and social needs, to act, to perform assigned tasks» (Berezina et al., 2017).

Environmental competence is manifested in systematic decision-making to take into account the environmental consequences of one's own activities, which have a certain impact on the environment. If this impact is positive, it will not disturb the fragile dynamic balance in the biosphere. The basis of ecological competence (Lypova et al., 2012) is ecological knowledge, experience of practical activities in the environment. Acquired environmental knowledge is the individual's own property, it is formed

under the influence of environmental information obtained from certain sources (education, media space, other people, etc.).

In addition to professional activities, each person affects the environment through their daily activities. After all, almost everyone from time-to-time rests in the natural environment, and in everyday life is a consumer of water, natural gas, electricity, etc. Every day we have to make choices about what products to choose, what tools to use, how to heat the house, how to deal with waste. Therefore, the solution of many environmental problems (especially at the local level) lies in the plane of changes in everyday habits and the everyday activities style of each person (Table 2.25). This process is closely related to the ability of each individual, assessing the level of safety, to consciously choose those means and patterns of behavior every day that allow to minimize the impact on the environment and health. So, it is about everyday environmental competence in the field of sustainable consumption. Competent decisions in everyday life can affect the solution of environmental problems at any level. However, competence is revealed only in those situations that concern the individual directly.

Table 2.25 – An example of saving resources and funds at the household level (developed by the authors based on (Berezina et al., 2017)

Characteristics	Bathtub	Shower
The water volume used for 1 time, l	200	25
Price of 1 m^3 hot water, UAH	95,26	95,26
Price of operation when used by 1 person 30 times per month, UAH	19052	2381,5

Social and humanitarian policy measures aimed at supporting well-being and preserving human capital can be implemented only if they are based on increased environmental competence and balanced economic capacity. Although russian aggression still continues (Pyshchulina et al., 2022). and will probably continue for a long time, the environmental competence increasing processes and socio-economic recovery of the country cannot wait for the end of hostilities. At the same time, any drawings should take into account and use current environmental threats and socio-economic changes.

The environment closest to a person, having a certain level of environmental culture, makes daily decisions regarding the choice of activity style to preserve the environment, is personal «field (zone) of

responsibility». Therefore, we can clarify the definition of ecological competence in the following way: ecological competence is a manifestation of ecological culture in the «zone of responsibility» of an individual. Professional environmental competence concerns adults, and its formation is primarily the prerogative of universities, schools, technical schools, institutes, etc. Everyday competence is inherent for everyone. It should be formed from childhood both in the family and by means of a purposeful educational process in preschool, school, extracurricular and higher education institutions (Lypova et al., 2012). According to the types of environmental competence and areas of its use, the authors proposed a conceptual scheme for increasing environmental competence, shown in fig. 2.27. As we can see, the effect has a comprehensive direction and is aimed at achieving sustainable development goals.

Chapter 36 «Promoting education, informing the population and personnel training» of the action program «Agenda for the XXI century» describes the fundamental role of education in promoting sustainable development. At the sixth session of the UN Commission on Sustainable Development (1998), a resolution was adopted on recommendations to the countries governments to integrate the sustainable development goals into educational programs at all levels. Subsequently, the world opinion formation began regarding the fact that achieving the balanced development goals is essentially continuous learning and, conversely, continuous learning is what development is. The Declaration and the plan for implementing the decisions of the World Summit at the highest level on sustainable development (Johannesburg, South Africa, 2002) emphasized the need to include the concept of balanced development in all education systems in order to turn them into a key development factor (Liubarets, 2017).

As part of the integrating process implementation of the sustainable development goals into educational programs, at the moment it is possible to highlight the following EU programs, which are aimed at and contribute to increasing the environmental competence of society members:

I. Implementation of Erasmus+ program projects in the Jean Monnet Modules direction (Erasmus+, 2022) in the higher education field (specific discipline teaching), which are aimed at supporting the teaching and research of EU best practices in higher education institutions, as well as spreading its influence to society representatives (business and government representatives, representatives of civil society, representatives of various levels of education and mass media).

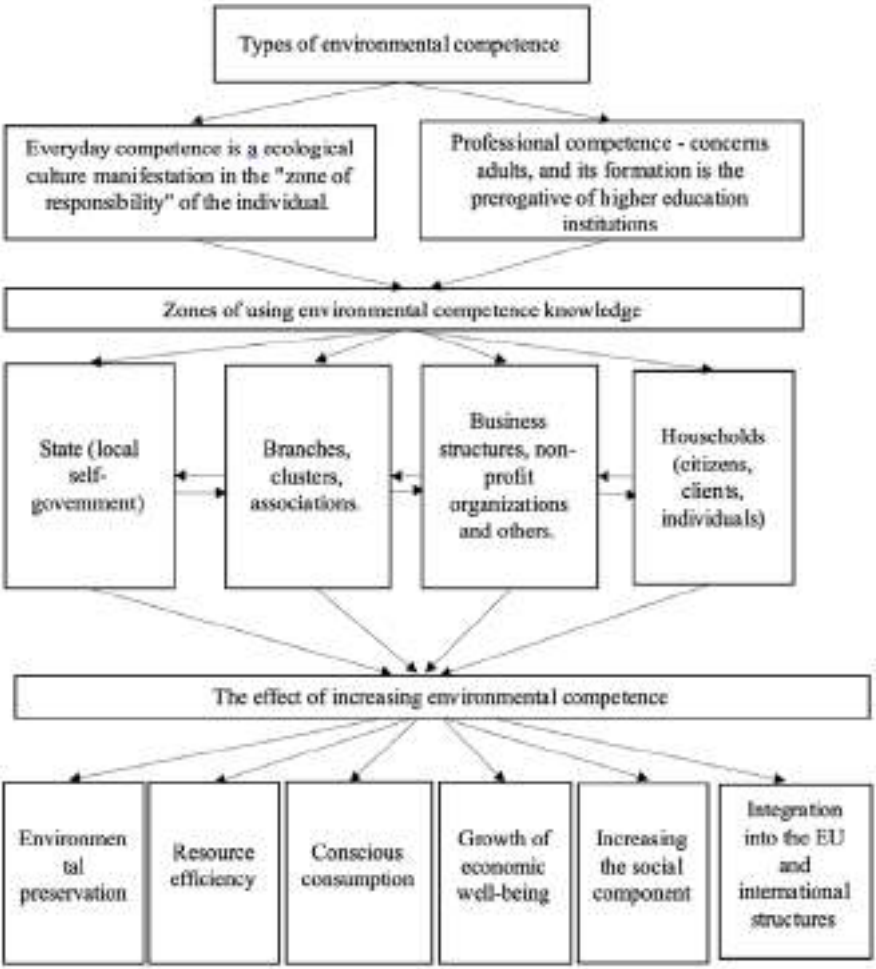


Figure 2.27 – Conceptual scheme of increasing environmental competence

II. Horizon 2030 Program, which aims to combat climate change, helps achieve the UN Sustainable Development Goals and boosts the EU's competitiveness and growth. The program promotes cooperation and strengthens the impact of innovations research and development, support and implementation of EU policies, while solving global challenges, ensures the dissemination of excellent knowledge and technologies (Horizon 2030).

III. The program «European Union for the Environment» (EU4Environment, 2019) for the Eastern Partnership countries includes the following components: resource-efficient and clean production; circular economy and industrial waste management; single market of green products. The program aims to increase national responsibility for the country's economy greening, promote awareness and education, public recognition of the need to transition to a «green» economy, familiarization with the single market of «green» products and its demonstration.

Preparation of citizens with a high level of ecological knowledge, ecological awareness and culture based on new criteria for assessing the relationship between human society and nature (harmonious coexistence with it) should become one of the main levers in solving extremely acute environmental and socio-economic problems of modern Ukraine.

Environmental education should (Kontseptsiia, 2001) be aimed at the environmental competence formation as a component of the national and public education system for all population groups of Ukraine (including through environmental education with the help of public environmental organizations), ecologization of academic disciplines and training programs, as well as professional environmental preparation through basic environmental education.

Education for sustainable development should be focused on helping to solve complex problems of achieving balanced development using teaching methods that combine (integrate) educational and practical goals (Berezina et al., 2017). It covers various aspects of education on development problems (economic, humanitarian, engineering, etc.), focused on the thematic structure of the economic, consumption and production sectors, biodiversity conservation, rational use of nature, reducing the scale of poverty, social justice, responsibility on a local and global scale, development of rural and urban areas (territorial communities), etc. The national system of education for sustainable development should include both formal and informal education systems, population awareness and professional training, as well as comprehensive provision processes of strategic planning, integrated management of knowledge, competence at the state level and the level of local government (self-government).

2.13. Harmonization of the education services market of EU countries and Ukraine

At the current stage of social progress, one of the main features of a civilized, industrial country is a highly developed and efficient market for educational services (Avigdor, 2011). The market of educational services in Ukraine has been negatively affected by both internal factors (within the market itself) and external factors (instability and negative changes in the national economy, political-legal, demographic and socio-cultural systems) for a long time. The inconsistency of legislation also makes it difficult to reform and bring education, in particular higher education, to international and European conditions of the educational space, and modern demographic trends lead to negative dynamics of indicators of the market capacity of educational services and an increase in the level of competition among institutions and organizations that offer them (Deforzh, 2022).

A decrease in the level of income of the population and an increase in the level of inflation in the country affect the reduction of solvent demand for market services. The devaluation of knowledge in the hierarchy of the needs of young people and the belief in the impossibility of finding a job by profession underestimate the value and prestige of education in the eyes of the younger generation. The above-mentioned factors require constant adjustments of the strategies of educational institutions and organizational changes in order to adapt to the changing external environment and the development of demand (Khandiy, 2015).

We emphasize that such strategies for the development of the market of educational services in Ukraine should take into account the integration of the market of educational services and the education system itself into the market of educational services of the European Union. European integration processes in the political and economic spheres of the Ukrainian state actively influence the educational process. The integration of the Ukrainian education system of all levels into the Bologna educational system since May 2005 was the beginning of the harmonization and improvement of the system of market relations regarding educational services with the system of the European educational environment.

With the development of economic processes, the role of knowledge and skills increases. Knowledge and skills simultaneously become a commodity in the market of educational services and the labor market. We note that the high level of competitiveness of the country's economy today is determined by innovative and intellectual potential and the ability to perceive new knowledge. And the main factors of the country's competitiveness in the conditions of the formation of the knowledge

economy are: rapid development of the knowledge market; use of innovations; active development of the social sphere (Hutsaliuk, 2019).

Therefore, the improvement of the market of educational services is a necessary prerequisite for the practical implementation of the goal of a state with a socially-oriented economy to increase the standard of living of the population (Malyukina, 2014). It is worth pointing out that the market of educational services in Ukraine is presented as a system of relations in market conditions, regarding the purchase and sale of an educational service, which by virtue of this becomes a commodity. It is important to understand that in this market, the object of purchase and sale is not education itself, as a process of acquiring knowledge, but an educational service that includes a set of material and non-material resources necessary for the learning process. At the same time, the market of educational services can be considered in two aspects: as an independent element and as part of the labor market (Navolokina, 2017). Also, the modern market of educational services is considered as an environment and sphere of production, promotion, implementation and consumption of educational services. The market of educational services is also understood as the material relationships between the participants of the educational process: those who study, organizations that provide educational services, as well as individuals and legal entities that pay for them and in some way regulate them (Zharska, Netkova, 2014). In our opinion, it is appropriate to consider the market of educational services from the position of a systemic approach, which defines it as "a complex socio-economic system consisting of certain elements: producers and consumers of educational services" (Antokhov, 2009). Considering this fact, the market of educational services of Ukraine is characterized as a complete socio-economic system of interconnected elements, subjects and objects of market relations, which has specific properties and performs special functions (Table 2.26).

Thus, according to the data of the State Statistics Committee of Ukraine regarding the volume of implemented educational services in the period from 2020-2022, higher education remains the leader compared to vocational and technical educational institutions – 1330 thousands people in 2022, which is 5 times higher (269, 4 students). However, the number of institutions of comparable educational levels has the opposite value: 756 thousands against 289 thousands. Let's emphasize that in the period from 2020-2022, the number of students (users of services) in preschool and secondary educational institutions increased, at the same time, the number of students in higher and vocational educational institutions increased. This is explained by the negative demographic changes of the past years, as well as the emigration processes of today's youth, who aspire to receive high-

quality European higher education and be in demand on the labor market of EU countries.

Table 2.26 – The market of educational services as a socio-economic system (based on materials (Antokhov, 2009))

Sign	The content of the manifestation
Elements	Objects An educational service is a personal and public good (goods) that has consumer value and contributes to the accumulation of human and social capital of society, region, and individual. Subjects The producers are scientific and pedagogical staff of educational institutions of all levels of education. Consumers are the state, region, household, individuals and legal entities.
Properties	Integrity is the internal unity of the elements of the market of educational services. Hierarchy – subordination of elements of lower levels of the market of educational services to higher ones. Emergence – the combined functioning of interconnected elements of the system creates qualitatively new functional properties of the market of educational services expressed in the cumulative effect of the consumption of educational services over time. Openness – availability of educational services and access to the industry. Targeted nature – provision of educational services in accordance with the goals of the development of the field of education and science, defined in programmatic national documents and legislative acts
Functions	Educational – ensuring the acquisition of complete knowledge and skills in accordance with the requirements of the labor market. Scientific – provision of conditions for carrying out scientific and research activities by market subjects. Integrative – the involvement of all market subjects in the creation and sale (consumption) of a quality product (educational service). Social – creation of a socially useful good (educational service). Entrepreneurial – providing conditions for self-initiated economic and commercial activity by subjects of the educational services market for profit and creation of a socially useful good. Motivational – covers the development and use of incentives for effective interaction of subjects of the educational services market. Informational – obtaining by the system and its elements the information necessary for the implementation of coordinated and purposeful activities to achieve the set goal.

The market of educational services of Ukraine includes such main producers of educational services of various educational levels as: preschool education institutions, general secondary education institutions, professional pre-higher and professional (vocational-technical) education institutions, and higher education institutions (Table 2.27).

Today in Ukraine, problems related to the imperfection of mechanisms of interaction between education and the labor market have become acute. The legal framework governing this issue requires changes and additions. The partnership between educational institutions, business representatives and the state is at a rather low level. There is a lack of coordinated actions in the activities of central and regional authorities, which should promote the interaction of education and the labor market, coordinate work. At present, they are not responsible for failure to fulfill the tasks assigned to them by the relevant legal acts.

This is far from a complete list of problems, the solution of which would improve the interaction between education and the labor market. In this regard, all components of the mechanism for regulating the interaction between education and the labor market (legislative, organizational-management, structural, financial, program-target, etc.) need improvement. One of the sources of this process is the study and implementation of European experience in regulating the interaction of education and the labor market. This, in turn, will help to develop an effective educational and employment policy that will meet the best European standards (Lavrynenko, 2016).

Therefore, the issue of harmonization of the educational services market of the EU and Ukraine remains relevant, primarily for reasons of eliminating emigration flows of potential students of higher educational institutions of Ukraine and harmonizing the quality of education in accordance with the standards and requirements of the European Educational Space.

We will consider harmonization from the point of view of the convergence of the implementation of educational services and the convergence of the higher education system of Ukraine and the EU countries, as well as convergence to the unified norms created in the EU countries regarding the functioning of educational services markets. Thus, it should be understood that in the direction of creating harmonious systems of higher education in Ukraine in accordance with the norms of higher education in the EU countries, it is worth following the educational concept of the Bologna Process: the formation of a pan-European system of higher

education in the future, called the European Higher Education Zone, which is based on the commonality of fundamental principles of functioning (Table 2.28).

Table 2.27 – The number of educational institutions of Ukraine by educational level that provide educational services in the period of 2019-2022 (created by the authors based on data (Demographic and social statistics))

Indexes	Years				Growth rate (until 2019), in %
	2019	2020	2021	2022	
Preschool education institutions (network, thousands)	16.7	14.8	14.9	14.9	-10.8
Preschool education institutions (number of children, thousands of people)	1471	1291	1300	1304	-11.4
General secondary education institutions (network, thousands)	19.3	17.3	16.9	16.2	-16.1
General secondary education institutions (number of pupils, thousands of people)	4204	3783	3846	3922	-6.7
Institutions of professional pre-university and professional (vocational and technical) education (network, thousands)	968	798	787	756	-21.9
Institutions of professional pre-university and professional (vocational and technical) education (number of students, thousands of people)	391.2	304.1	285.8	269.4	-31.1
Institutions of higher education of III-IV levels of accreditation (network, thousands)	325	288	287	289	-11.1
Institutions of higher education of III-IV levels of accreditation (network, (number of students, thousands of people))	1723.7	1375.2	1369.4	1330	-22.8

The Europeanization of higher education in Ukraine today should be based on the principles, or rather the ideology of high-quality, accessible higher education, which forms a complete personality, which is committed

to the general ideals of European values of life. The ideology of this course is defined by the EU institutions as the idea of the commonality of such values as democracy, social justice, and human rights. They should be the foundation of modern higher education (training and upbringing) of young Europeans.

Table 2.28 – Directions of harmonization and improvement of the national system of higher education with the fundamental principles of the pan-European system of higher education (based on materials (Hutsaliuk, 2019))

Fundamental principles of the pan-European system of higher education	**Directions of alignment and improvement of the national system of higher education with fundamental principles**
Two-cycle training	Studying for a bachelor's degree within 3 years (in the first cycle) and obtaining a master's degree (after 1-2 years of study after obtaining the 1st degree) and/or a doctoral degree (provided the total duration of study is 7- 8 years old).
Credit system	Implementation of the accumulation of credits (credit units of labor intensity) in all cycles of study, including obtaining a doctoral degree.
Quality control of education	Functioning of independent accreditation agencies that will establish the quality level of higher education institutions based on the knowledge, skills, and abilities acquired by graduates. Establishing standards of transnational education.
Mobility	Expansion of two-way mobility of students and scientific and pedagogical staff of Ukrainian higher education institutions and educational institutions for the purpose of exchanging experience and improving qualifications.
Employment of graduates	Correspondence of the provided knowledge and skills obtained at higher education institutions to the requirements of the labor market, simplification of professional recognition of qualifications and coordination of the names of subjects in the educational program complex with subjects of educational programs of European higher education institutions.
Attractiveness of the European education system	Acquiring the European education system as an element of obtaining additional knowledge and skills.

The principles of higher education in Ukraine as a European state in the context of European ideology should be:

First, higher education should be highly qualified and ensure the future successful self-realization of a citizen.

Secondly, legalization at the level of state and regional strategies for the development of ethical, religious, cultural and regional education development of the individual and citizen, in particular their diversity.

Thirdly, in higher education, one should clearly distinguish and support the external (higher education institutions' own provision of the educational process) and internal (ensuring the harmonious development of the personality) side of the educational process.

Fourth, the formation of an idea about the need for professional education on the basis of higher education, which is no longer definitive. Introduction of programs in higher education that provide for the acquisition of knowledge and skills for self-development.

Fifth, compliance of the disciplines of higher education and research activities in higher education institutions with the needs of modern science and technology. Activation of the innovativeness of the educational process and encouragement, in particular financial, of teachers to modern achievements and research.

Sixth, the use of computers and audiovisual equipment opens up new opportunities for their use in the educational process.

The national system of higher education in the EU countries are original entities with their own organizational structures, forms, content, etc., which are conditioned by specific features of their historical development and current state, originality and priorities of current problems. As a spiritual and historical phenomenon, they are enriched by the heritage of other cultures, learning from them values that add new things to their own treasures. In the conditions of turbulent integration processes on the European continent, a purposeful formation of a single educational space is taking place - a set of common value orientations, elements of content, methods, means of teaching and upbringing, which characterize the process of transferring the experience of predecessors to a new generation in order to ensure continuity and reproduction of socio-cultural experience (traditional education) , as well as discovery of new experience, stimulation of changes in the existing culture (innovative learning) (Logush, 2016). In 2000, the Lisbon Strategy of the European Union defined common goals and priority directions for the formation of a single educational space: lifelong education, the importance of key competencies and qualifications, the importance of training, training and retraining of young people in accordance with modern educational

requirements, etc. (Declaration of the 5th WMA World Conference on Medical Education). The Lisbon strategy is based on the priority of knowledge, innovation and optimization of human capital.

It should be emphasized that in the educational policy of the EU, one of the priority directions has become the improvement of the quality of medical education. In this context, the European Accreditation Council for Continuing Medical Education (EACCME) was created (2000). The Council has developed a European system of accreditation of doctors of all specialties in the process of lifelong learning. European countries joined the accreditation system. For Austria, Bulgaria, France, Germany, Hungary, Ireland, Italy, Poland, Slovakia, Great Britain, Switzerland, the system is a mandatory condition for the continuous development of a doctor. Accreditation is carried out every 4 years, during which the doctor must accumulate 50 credits per year for a certain type of activity (practical work, internship, attendance at educational events with certificates of success, etc.) (UEMS, 2011).

In 2004, the International Council for Accreditation of Medical Education (Task Force on Accreditation in Medical Education) was created, which together with the European Council for Accreditation of Medical Education developed standards for evaluating medical educational institutions. It was determined that the accreditation of the medical industry should be carried out on the basis of three main evaluation indicators: education, service and health status of the population, scientific research.

The following can be considered the leading factors in the formation of prerequisites for the harmonization of higher education and the educational services market of the EU and Ukraine:

- restoration and crystallization of historical, political and social contexts;

- formation and support of features of cultural and national traditions, beliefs and views of the teacher, his status, role, competence and professional functions;

- implementation of modern international pedagogical ideas: integration, professionalization, universalization, etc.

The specified prerequisites will be practically implemented by Ukraine not only as a partner, but also as a future member of the Union, taking into account the experience of the EU countries regarding the harmonization of the market of educational services in the field of higher education. We would like to emphasize that the EU institutions have singled out the main areas of this process of coordinating the functioning of the educational market and the higher education system:

1) harmonization of legislation;

2) innovative development in post-industrial society;

3) provision of targeted financing based on the creation of funds to encourage innovation and investment in human capital;

4) commercialization of scientific and research activities of the institution of higher education.

Today, the national systems of higher education in the EU member states remain in the form in which they were formed before unification into a single union of states and differ significantly from each other. Within the EU, the European Commission (EC) develops and issues recommendations on higher education, but they are non-binding, and the EC acts as an assistant in introducing policy in the education sector without exerting significant influence on national structures. An exception to the current situation is the Bologna process, the program of which is implemented in all EU member states and harmonizes the structure of higher education, allowing students to freely choose the country of study. In other words, the Bologna process contributes to the internationalization and integration of higher education in the EU (Chaika, 2015).

Thus, within the framework of harmonizing the functioning of the educational market and the higher education system in the direction of harmonizing legislation, the legislation of each of the EU member states regarding educational activities must implement the adopted Lisbon strategy, the purpose of which is defined as the formation of the EU as "the most competitive, dynamic and knowledge-intensive economy in the world, capable for sustainable economic growth, with the availability of better jobs and greater social cohesion." The leading role in achieving this goal should be higher educational institutions, whose activities focus on the creation of structural funds for financing research infrastructure, personnel training and human capital, research activities, cooperation between universities and industry with the aim of promoting innovative activities and competitiveness of small and medium-sized enterprises, further commercialization of scientific and technical developments and innovations, etc.

The individual norms of the legislative framework of the EU member states in the field of educational activity listed in Table 2.29, in accordance with the main development strategy of the EU, should be developed in the corresponding profile normative legal acts of Ukraine. In particular, strategic areas should be determined in the Law "On Higher Education", which, in particular, should establish a norm regarding the primary subject that affects the competitiveness of the national economy and its innovative development.

Thus, within the framework of coordinating the functioning of the educational market and the higher education system in the direction of innovative development in the conditions of a post-industrial society, the activities of the European Commission regarding "Implementation of knowledge in practice: a broad-based innovation strategy for the EU" have been determined. The relevant document establishes the strategic importance of education, skills, mobility of researchers, transnational cooperation, knowledge exchange, unity policy, financing of innovations, etc., as well as distributed competences and responsibilities for the implementation of specific proposed measures.

Therefore, the goal of the EC in the direction of the innovation strategy for the EU is defined as an attempt to identify theoretical grounds for the distribution of responsibility for policy areas between the European, national and regional levels, namely:

1) system of state spending on education;

2) creation of an open, unified and competitive European labor market for researchers;

3) knowledge exchange system between higher education institutions and other research organizations, as well as industry;

4) system of intellectual property rights;

5) legislative framework for the development of new digital products, services and business models.

Therefore, currently EU programs and strategies in the field of introducing innovations in higher education are focused on improving the transfer of knowledge between institutes of research activity in the field of higher education; formation of a strategy for the coordination of industrial property rights; funding of scientific research within the scope of supporting cooperation between universities, research institutes and industry.

As for higher medical education, in the EU it is undergoing the fourth stage of its development - "Implementation of ideas of continuous medical education" (2004-2014).

According to it, in the development of medical education, the following priority directions for improvement of the medical field are singled out, namely: the creation of a single space of medical education as a component of the European space of higher education, the continuity of medical education, the focus of medical education on improving the level of health of the population.

Table 2.29 – Organizational and legal framework for supporting research and educational activities of EU member states (based on (Chaika, 2015))

The name of the legal act of the EU member state	The purpose of adopting the act
Innovation and Research Law (1999) (France)	- providing a legal basis for relations between the state sector of scientific research and the business sector by creating enterprises; - promoting the mobility of human resources between the research sector and business structures; - encouraging the participation of scientists in conducting research at enterprises and evaluating their results
Law on Scientific and Technological Innovation (2004) (Hungary)	- establishment of basic principles of state support for research and innovation activities; - promoting the application of the results of scientific research activities for commercial purposes; - strengthening the protection of intellectual property rights; - promotion of services related to research and development, technological innovations; - improvement of social perception and correct understanding of research, development and technological innovations
Law on Scientific Activities (2005) (Latvia)	- provision of a legal basis for the research system of the state; - establishment of unity of scientific activity and higher education, rights and obligations, independence and academic freedom of scientists; - definition of competences and responsibilities of state authorities in ensuring scientific and research activities
Agreement of the United States on Federal and Regional Government Excellence Initiatives for Support and Research at German Universities (2005) (Germany)	- cooperation on issues of support and research in German universities between the central and federal levels; - promotion of competition between higher education institutions in the specified field; - promoting the establishment of close relations between higher education institutions and non-university research institutes
Scientific Research Law (2006) (France)	- encouraging cooperation between state research institutions and higher education institutions; - establishing criteria for evaluating scientific research and the effectiveness of higher education in the context of such cooperation

According to the research of Ya. Tsekhmister and L. Logush (Logush, 2016), it was established that in European countries, the reform of national systems of medical education takes place under the direct influence of global trends in the development of education, using international standards and declarations to create a common legislative framework. It was determined that the main tasks and directions of development of medical education in the countries of the European Union are:

- analysis and adaptation of the standards of the World Federation of Medical Education in the European context of medical education and the Bologna process to establish requirements for the accreditation of medical educational institutions in Europe;

- obtaining a set of quality standards for medical education in the EU, based on the development and adaptation of existing curricula and medical education reform programs.

Today, Ukraine's strategies, in accordance with the EU's strategy in the field of education, science, and innovative development, should be focused on the following (Chaika, 2015):

- improvement of the process of knowledge transfer of educational and research institutes to industry and society;

- support of member states in adopting local policies in accordance with EU practice and making possible regional adjustments;

- harmonization of procedures for registration of patents, trademarks and other forms of intellectual property rights;

- reducing the fragmentation of science and education in Europe in order to give innovative ideas a market form; supporting cooperation between industry and research institutes.

Thus, within the framework of coordinating the functioning of the educational market and the higher education system in the direction of providing targeted financing based on the creation of funds to encourage innovation and investment in human capital. EU legislation on state support for financing research and innovation activities consists of the following types of legislative acts: general framework legislation; acts created on the basis of a common policy plan; measures provided for in the budget legislation. Each EU member state has introduced its own system of state funding of scientific research activities, which is most often carried out through national funds. Financial support of scientific research activities occurs by providing certain financial incentives, such as tax benefits, introduction of targeted programs, projects, grants.

Benefits for enterprises for research and development in EU member states (Chaika, 2015):

- reduction of taxes on investments in research and development;
- reduction of taxes for spending on scientific personnel;
- tax benefits for universities that carry out research activities;
- tax benefits for reinvestment of profit in the development of the company;
- tax benefits for spending on intellectual property rights;
- tax benefits for venture capital;
- reduction of taxes on patent applications.

Along with state funding of research activities, all EU member states are trying to attract private funding on a competitive basis, as well as foreign investments in national research and development. Thus, in such countries as Austria, Belgium, Cyprus, Denmark, Estonia, Greece, Hungary, Lithuania, Malta and Great Britain, foreign investment makes up at least 10% of the total expenditure on research and development. Bulgaria, Finland, France, Ireland, Latvia, Poland, Slovakia, Slovenia, Spain, and Sweden have slightly less (from 5 to 10%) international funding. In the rest of the EU member states (Czech Republic, Germany, Portugal, Romania), the share of foreign investors in the total amount of spending on national research and development is less than 5% (Avigdor, 2011).

In most EU member states (France, Poland, Macedonia, Greece, Slovenia, Ireland, Denmark, Austria, Germany, Belgium, etc.) with the aim of providing support to small and medium-sized businesses in obtaining research and development, services for the development of a new product , consulting, staff training, etc. a voucher scheme has been introduced.

In the EU, at the Union-wide level and at the level of individual member states, tools have been developed to support innovation and research and development by attracting venture capital through the creation of venture capital companies and direct investments of so-called "business angels" (wealthy people interested in certain firms and business projects). They include legislative acts in the field of financing, budget, tax laws, orders of ministries, etc. and are based on state strategies of scientific and research activities (Chaika, 2015).

We emphasize that the process of harmonization of the Ukrainian higher education system and the functioning of the educational services market should be carried out on the basis of separate financing of national innovations and research developments through the relevant national funds.

Thus, within the framework of coordination of the functioning of the educational market and the higher education system in the direction of commercialization of scientific and research activities of higher educational institutions, a mechanism of cooperation between universities and small and medium-sized businesses is being implemented with the help of measures that vary from holding conferences and seminars with the aim of its activation to financing the involvement of scientists in production, in particular (Chaika, 2015):

- joint conferences and seminars (Italy, Austria, Slovenia, Great Britain);
- financing of cooperation and involvement of researchers in business (Czech Republic, Great Britain, Denmark, Estonia, Slovenia, Spain);
- stimulating the creation and further financing of funds for joint research (Great Britain, the Netherlands, Germany, Denmark, Spain, Ireland, Hungary);
- introduction of tax benefits for enterprises cooperating with state universities (Slovenia);
- implementation of innovative voucher schemes for small and medium-sized enterprises (Netherlands, Estonia, Romania, Cyprus, Czech Republic, Great Britain, Denmark, Ireland).

Therefore, the implementation of the main directions of the process of harmonizing the functioning of the educational market and the system of higher education of Ukraine and the EU must be implemented, first of all, through the national legislative mechanism of support for science, technology and education, which must comply with the norms of both the regulatory and legal documents of the European Commission and the legislation of the member states of the EU. The process of harmonization and unification of norms must meet the demands, first of all, of the labor market of Ukraine. This issue concerns the national security of the country and should be fixed in the relevant documents.

It was found that in the conditions of development of a healthy and intellectual society, the role of higher education is of strategic importance. And in market relations, higher education creates a socially useful good – an educational service, thanks to which knowledge, abilities and skills, professional competences are formed, which should be in demand at the time of work.

Table 2.30 – National funds for financing national innovations and scientific research developments in EU countries (based on (Chaika, 2015))

Fund	Directions of activity
Innovation Investment Fund of Great Britain	- investing in high-tech business with great potential for growth; - targeted investment of growing small companies in the fields of digital and biological sciences, environmentally friendly technologies; - orientation of activities in the areas of high technologies and environmental protection.
Venture Capital Promotion Fund (France)	- attraction of venture capital by small and medium-sized companies for conducting scientific research; - financing the implementation of innovative technologies.
National Danish Investment Fund	- finances private venture capital; - direct investment of companies, creation of obligations to venture capital funds; - management of the loan guarantee scheme.
Fund "Investments in Finnish Industry"	- investment of small companies in the fields of promising industrial technologies.
Finnish Innovation Fund "Sitra"	- development of competitiveness and provision of progressive and balanced development of the Finnish economy; - increasing business activity in the country and the level of international cooperation of Finnish enterprises; - stimulation and funding of scientific research; - organization and conduct of educational programs, support of innovative projects; - development of small and medium-sized enterprises; - promotion and attraction of venture capital to finance projects.
Swedish Industrial Development Fund	- promotion of industrial development in the country; financing of venture capital with state financing.
National Science Center and National Research and Development Center (Poland)	- funding of fundamental research and development of researchers; - support for applied research, scientific centers, non-governmental organizations and enterprises developing new technologies.

It has been established that European integration processes in the sphere of politics and economy also affect the education system and the market of educational services. The process of involvement in the educational space of the EU requires the harmonization of their markets in

the field of higher education in the direction of harmonizing the fundamental principles and ideology of the higher education system.

Prerequisites and main directions regarding the process of coordination of the functioning of the educational market and the system of higher education by EU institutions have been determined: harmonization of legislation; innovative development in post-industrial society; provision of targeted financing based on the creation of funds to encourage innovation and investment in human capital; commercialization of research activities of institutions of higher education.

Assessment of the competitiveness of the field of higher medical education and its institutions in the context of economic interaction. In accordance with the project of the Strategy for the Development of Medical Education in Ukraine, which provides for "the construction of a high-quality system of medical education ... to provide the health care sector with medical workers with a high level of training" (Regulations on the Ministry of Education and Science of Ukraine, 2014), the issue of methodical support for the process of assessing the competitiveness of higher medical education institutions is gaining some relevance. In the mentioned Strategy, one of the directions for solving the problems of the industry is the internationalization of medical education, which involves the activation of international activities of higher medical education institutions, ensuring the academic mobility of students, and the involvement of foreign teachers in cooperation. The qualitative characteristics of these processes depend on the competitive position of a certain educational medical institution and, at the same time, affect its competitiveness.

Problems and directions of formation of competitiveness of institutions of higher education are the object of scientific research of many domestic and foreign scientists. At the same time, the majority of scientists pay attention to the advantages, disadvantages, and prospects for the further development of educational institution ranking technologies, including O. Pryadko, I. Tarasov, O. Shurygin (Regulations on the Ministry of Social Policy of Ukraine, 2015), O. Khizhnyak (On the approval of the Strategy for the Development of Medical Education in Ukraine, 2019), K. Chernobaj (Pryadko, O.M., Tarasov, I.Yu., Shurygin, O.V. 2016), K. Khoroschak (About staffing standards and typical staffing of health care institutions, 2000) and others. The experience of implementing a rating assessment of the results of the activities of teachers and individual units of educational institutions is highlighted in the scientific works of T. Boychuk, I. Gerush, V. Khodorkovsky, and E. Tkach (Antokhov, 2009). The issue of increasing the competitiveness of institutions of higher

education and educational services is considered in the scientific works of Ya. Horyn, O. Senyshyn (Higher education in Ukraine in 2017, 2018; Vstup.OSVITA.UA), N. Konstantyuk (Zharska, Netkova, 2014). and other scientists. However, there is currently a need to develop a comprehensive methodology for assessing the competitiveness of institutions of higher medical education, which would include indicators for evaluating the competitive position of higher education institutions both at the national and international levels based on the achievements of individual teachers, departments and faculties.

The competitiveness of higher education institutions should be understood as their ability to successfully sell educational services and the results of research and, thus, attract funds from foreign and domestic students, customers of research and development works, buyers of patents, grant providers, as well as funds state funding in the form of a state order for the training of specialists in a certain field of knowledge. Without sufficient financing of the activity of the educational institution, taking into account the speed of technological changes and the constant growth of requirements for the quality of educational services, its development currently becomes impossible. One of the approaches to assessing the competitiveness of higher education institutions is the compilation of international, national and regional ratings.

The history of international ratings of educational institutions is more than 150 years old. In 1863, Karel František Edvard Rytíř Kořistka – a surveyor, geographer and engineer – published the work "Higher polytechnic education in Germany, Switzerland, France, Belgium and England", which was one of the first attempts to compile a rating of higher education institutions (Kořistka, 1863). At the end of the 20th century, more and more countries and organizations became involved in rating educational institutions.

Today, national, regional and international ratings are compiled in the USA, Great Britain, Canada, Poland, Germany, France, Ukraine, and a number of Asian countries.

The following global rankings are currently the most authoritative: World Universities Rankings, QS World University Rankings, Academic Ranking World Universities, Best Global Universities Rankings and Ranking Web or Webometrics, the main the characteristics of which are given in Table. 2.31.

Table 2.31 – Characteristics of the leading international ratings of higher education institutions (compiled by the authors using (About Academic Ranking of World Universities; How U.S. News Calculated the Best Global Universities Rankings; QS Stars University Ratings; Ranking Web of Universities. Methodology; Regulations on the State Statistics Service of Ukraine, 2014))

The name of the rating	Compilers (country)	Description, main purpose	Thematic groups	Evaluation indicators, weighting factors
1	2	3	4	5
The World University Rankings	British publishing house Times Higher Education (THE)	Providing detailed information on the productivity of university activities in all main areas, and also allows comparing higher education institutions with other institutions by regions, subjects and other key criteria.	1. Life sciences. 2. Clinical, pre-clinical & health. 3. Physical sciences. 4. Psychology. 5 Engineering & technology. 6. Computer Science. 7. Law. 8. Arts &Humanities. 9. Business & Economics. 10. Social sciences. 11. Education.	Teaching 30%, Research 30%, Citations 30%, International outlook 7,5%, Industry income 2,5%.
Academic Ranking of World Universities	Center for World Class Universities (CWCU),	The rating evaluates the scientific and academic activities of institutions of higher education with the aim of reducing the influence of the peculiarities of national education systems on the final assessment.	1. Natural sciences and mathematics (SCI). In particular, mathematics, physics, chemistry, meteorology, earth sciences, planetary sciences. 2. Engineering/technology and informatics (ENG). In particular, mechanisms, electrical sciences, general construction science, chemical industry, materials science, computer science, etc.	Nobel or Fields Prize-winning alumni (10%), Nobel or Fields Prize-winning collaborators (20%), researcher citation frequency in 21 categories (20%), articles published in Nature or Science journals (20%), citation indices for natural sciences and humanities of the Institute of Scientific Information,

Continued table 2.31

1	2	3	4	5
	Graduate School of Education (formerly Institute of Higher Education) Shanghai Jiao Tong University, China	More than 1,200 higher education institutions participate in the study, and only 500 are included in the list of the best universities in the world.	3. Life and agricultural sciences (LIFE). In particular, biology, biomedicine, agronomy and environmental science. 4. Clinical medicine and pharmacy (MED). In particular, clinical medicine, dentistry, nursing science, public health care, veterinary medicine, pharmacology, etc. 5. Social sciences (SOC). In particular, economics, sociology, political science, law, education, management, etc.	Science Citation Index and Social Sciences Citation Index, as well as indexes of leading journals Arts and Humanities Citation Index (20%), the aggregate result of previous indicators in relation to the number of personnel of higher education institutions (10%).
QS World University Rankings	British consulting company Quacquarelli Symonds (QS)	Combining statistical analysis of the activity of educational institutions, audited data, data of a global expert survey of representatives of the international academic community and employers. More than 2,500 educational institutions of the world are evaluated, of which 500 are included in the rating	1. Natural sciences. 2. Social sciences. 3. Humanities and art. 4. Life sciences. 5. Engineering sciences and technologies	Reputation in the academic environment (40%), citations of scientific publications by university representatives (20%), the ratio of the number of teachers and students (20%), the attitude of employers to graduates (10%), the relative number of foreign teachers and students (5% each)

Continued table 2.31

1	2	3	4	5
Best Global Universities Rankings	US. News & World Report – American news magazine, Washington	The rating is built on the basis of 13 indicators that measure the results of scientific research of educational institutions and their global and regional reputation. Applicants can use these rankings to explore higher education options outside their home countries and to compare key aspects of the schools' research missions.	1. Agricultural sciences. 2. Biology and biochemistry. 3. Chemistry. 4. Clinical medicine. 5. Environment / ecology. 6. Earth sciences. 7. Immunology. 8. Materials science. 9. Microbiology. 10. Molecular biology and genetics 11. Neurology and behavioral sciences. 12. Pharmacology and toxicology. 13. Physics. 14. Botany and zoology. 15. Psychiatry / psychology. 16. Space sciences. 17. Informatics. 18. Economy and business. 19. Mathematics. 20. Engineering sciences. 21. Social (social) sciences and sciences related to health care. 22. Art and humanities	Global research reputation (12.5%), regional research reputation (12.5%), number of publications 10%, number of books (2.5%), conferences (2.5%), normalized citation rate 10 % of total citations (7.5%), the number of publications included in 10% most cited (12.5%), share of publications included in 10% most cited (10%), international collaboration in publications (5%), number of highly cited publications over a 10-year period (5%), ratio the number of highly cited publications to the total number of university publications 5%, the share of publications with foreign co-authors 5%

Continued table 2.31

1	2	3	4	5
Ranking Web or Webometrics	Cybermetrics Lab (Spanish National Research Council, CSIC)	Educational institutions are compared according to the degree of filling of their official websites. At the same time, not the quantitative values of the indicators are summed up, but the ranking values (the places of a specific higher education institution in the ranking for each of the four rating indicators are summed up)	–	Size (S) – number of site pages covered by search engines (25%). Visibility (V) – the number of unique external links to the site pages (50%). Rich Files (R) - the number of "valuable" files placed on the site (12.5%). Scholar (Sc) – the number of pages and links to the website of the educational institution (12.5%)

According to the World University Rankings methodology, the ranking is determined by 13 parameters (indicators), each of which has its own weight (percentage of the total score). Indicators are grouped into 5 categories. Participation in the rating for educational institutions is voluntary and free of charge. In order to participate, the educational institution must provide an application and the necessary information to the responsible compilers in advance (Regulations on the rating system for evaluating the activity of departments, structural divisions and teachers of the Zaporizhia State Medical University, 2018). According to experts, the Times Higher Education ranking evaluates only those universities engaged in science (About staffing standards and typical staffing of health care institutions, 2000).

The Academic Ranking of World Universities (ARWU) was first published in June 2003 by the Center for the Study of World Class Universities (CWCU) of the Higher Education Academy (formerly the Institute of Higher Education) of Shanghai Jiaotong University, China.

ARWU is defined on the basis of six objective indicators, namely: the number of graduates and employees awarded the Nobel or Fields Prizes, the number of highly cited researchers, articles published in Nature and Science journals, articles indexed in ScienceCitationIndex – Expanded and SocialSciencesCitationIndex, university productivity per capita. ARWU's significant influence is due to scientifically based, stable and transparent methodology used during ranking (About Academic Ranking of World Universities). As in the previous rating, most of its criteria evaluate the scientific activity of universities.

When compiling the World University Rankings, QS uses six simple indicators that sufficiently characterize the productivity of universities, including: academic reputation, reputation among employers, the ratio of students to teachers, citations, the ratio of international faculties, the ratio of foreign students (QS Stars University Ratings). So, the rating provides a detailed overview of educational institutions, on the basis of which applicants have the opportunity to determine which universities are the best according to certain educational programs, study conditions, the possibility of further employment, social responsibility, inclusiveness, etc.

The Best Global Universities Rankings are compiled with the aim of positioning US universities among the leading educational institutions on a global scale. Ranking results can be used not only by applicants, but also by universities to determine their own competitive position within their country or region, as well as to find partners for international cooperation (How U.S. News Calculated the Best Global Universities Rankings). Precisely in order to further strengthen international cooperation between universities, in 2018 the assessment methodology underwent certain changes: higher points were awarded to schools that published articles in co-authorship with researchers from different countries.

The Web or Webometrics rating is the largest academic rating of higher education institutions. Since 2004 and every six months, the Cybermetrics Laboratory (Spanish National Research Council, CSIC) has held an independent, objective, free open scientific event to provide reliable, multidimensional, updated and useful information about the work of universities from around the world, based on their web-presence. At the same time, Webometrics uses citation analysis for quality assessment, as it is a much more powerful tool than citation analysis or global surveys (Ranking Web of Universities. Methodology).

The results of the ranking of institutions of higher education are widely used today. First of all, they are used by potential students when

making a decision on choosing an educational institution to obtain a certain educational level (bachelor, master, graduate student, doctoral student). Given the constant growth in the demand for educational services due to the increased need for additional education, advanced training and retraining, it is possible to predict further growth in the popularity of ratings as guidelines for a more informed choice. In addition, the ranking provides each university with certain guidelines for its own development, helps establish competition between institutions of higher education, which, in turn, contributes to the improvement of the quality of educational programs (Kvitka, Starushenko, Koval, Deforzh, Prokopenko, 2019).

Employers' interest in the results of the rating is justified, on the one hand, by the level and quality of education of potential employees, and on the other, by the possibility of interaction with an educational organization in the field of applied research and development, which is characterized by its relative research and innovation potential. Numerous development and support foundations use the results of the ranking when determining the winners of various competitions.

Therefore, the popularity of the ratings is constantly growing, while the number of comments regarding the indicators used in the ratings and the methods of their determination is also increasing. In 2004, the International Ratings Expert Group (IREG) was established to develop a system of rating principles. The purpose of the IREG rating approval process, conducted by independent experts, is to verify and confirm that this rating is compiled professionally, with a transparent methodology, adherence to best practices and meets the need for relevant information of various stakeholders: students, higher education institutions, employers and others.

Among the advantages of rating educational institutions, scientists note: simplification and clarification of the complex environment of higher education for potential students and interested parties; providing universities with advertising and promoting their popularity; provision of incentives to improve the quality of education and the effectiveness of scientific research; improving the quality of data collection in the field of higher education. Disadvantages of rating activities are: provision of unreliable information regarding the quality of education due to the restriction of access to internal data of educational institutions; providing a distorted picture of changes over time (incomparability of data for different periods due to the fact that indicators and methods of their processing change); failure to take into account the features of various types of

educational institutions by universal ratings (Demographic and social statistics).

Currently, domestic institutions of higher medical education are absent or occupy low positions in international rankings. Thus, Lviv National Medical University ranks 3755th in the Web or Webometrics rating (Ranking Web of Universities. Ukraine), which is the best result among domestic medical universities. During six months of 2016, the National Medical University named after O.O. Bogomolets underwent an independent external audit of the international rating system QS Stars University Rankings (London, Great Britain), according to the results of which it received three QS Stars stars out of five possible, becoming the first and only educational medical institution in Ukraine to receive such a high rating (Logush, 2016). There are no domestic institutions of higher medical education in other international rankings.

According to experts, the reasons for the absence of Ukrainian medical universities in international rankings are: unsatisfactory level and volume of scientific work, academic dishonesty, low level or complete absence of international cooperation, insufficient rate of citation of scientific works, insufficient volume of publications in international scientific publications, reduction in the number of foreign students, low level of academic mobility, lack of international experience among teachers, lack of educational programs, the disciplines of which are fully taught in English.

National ratings of educational institutions can serve as a guide for applicants to choose a domestic medical higher education institution. Among such ratings, it is possible to mention the rating of universities of Ukraine "Top-200 Ukraine", the rating "Scopus", the rating "Examination examination score per contract" and the consolidated rating of higher education institutions of Ukraine.

The Top-200 Ukraine rating positions itself as the only rating accredited by the International Ranking Expert Group (IREG), which is based on a universal system of criteria that includes three comprehensive indices: the index of the quality of scientific and pedagogical potential, the index of the quality of education and the index of international recognition. The productivity of higher education institutions is determined using the general index of the rating assessment, which is integral and is determined on the basis of the above-mentioned comprehensive indices. Also, in addition to the general rating table for the best 200 higher education institutions, ratings are determined by groups of universities: classical,

technical, technological, pedagogical, medical, legal, institutions of economics, management and trade, agricultural, construction and transport, institutions of non-state ownership (The concept of training specialists according to the dual form of education, 2018).

The results of the following ranking of institutions of higher education are based on the indicators of the Scopus database, which is a tool for tracking the citation of scientific articles published by an educational institution or its employees. In the rating table, domestic higher education institutions are ranked according to the Hirsch index – a quantitative indicator based on the number of scientific publications and the number of their citations. The best result according to this indicator in 2018 among institutions of higher medical education was the Donetsk National Medical University – seventh place in the overall rating (Demand and supply on the labor market in terms of professions and types of activity).

During the compilation of the rating "Score of the external examination on the contract" they use the data of the admission campaign obtained by the information system from the Unified State Database on Education. The rating does not include institutions of higher education, which have less than 20 people enrolled per contract, as well as individual structural divisions of educational institutions. The average score of certificates of external independent evaluation is calculated among all persons enrolled in the first course at the expense of individuals and legal entities (contract). The third step of the 2018 rating is occupied by the Ukrainian Medical and Stomatological Academy (the best result among medical educational institutions), the National Medical University named after O.O. Bogomolets takes the fifth place (Gross Domestic Product. Statistical information).

The consolidated ranking of higher education institutions is compiled by the information resource "Osvita.ua" on the basis of the "TOP-200 Ukraine", "Scopus" and "Score of external examinations on the contract": each higher education institution is assigned a point equal to the sum of its places in each of the three ratings. If the educational institution was not represented in any of the ratings, it is assigned the place next to the last in this rating (201, 163, 201, respectively). According to the results of 2018, the seventh (highest) place among medical higher education institutions in the consolidated rating belongs to the National Medical University named after O.O. Bogomolets (Number of vacancies by types of economic activity).

As a result of the conducted research, the following conclusions can be drawn: Educational institutions of higher education of Ukraine improve educational services every year, offer new, interesting educational programs. In the Ukrainian system of higher education, the process of European integration and implementation of the European system of ensuring the quality of higher education of Ukraine is taking place through the rating of educational institutions of higher education.

2.14. Integration of Ukraine into the EU: formation of professional stability of police officers in the system of social maturity

The research is devoted to the problem of forming the professional stability of police officers in the system of social maturity as a direction of social aspects of Ukraine's integration into the EU. The search for ways to improve the training of the future police officer was carried out based on the disclosure of the essence of his professional stability, the structure of this stability, as well as the conditions that lead to its existence.

A necessary condition for the integration of Ukraine into the European Union (hereinafter - the EU) is the reform of the activities of law enforcement agencies, which on behalf of the state implement the relevant functions, increasing the prestige of this work and the level of skill of personnel assigned to prevent, reveal and investigate legal violations, ensure legality, stand guard public order.

Among the achievements in the development of Ukraine as a democratic and legal state, there is also a share of the Ukrainian internal affairs bodies (hereinafter referred to as the Ukrainian internal affairs bodies) - the modern police force, which has gone through a difficult path of formation in the conditions of the transformation of society, turbulent socio-political processes, the transition to a market multi-system economy, integration into the world economic system, the Russian-Ukrainian war. Such phenomena encourage each of the officials of the Ministry of Internal Affairs (hereinafter referred to as the Ministry of Internal Affairs) to a deep and critical analysis of their activities, further mobilization of forces and opportunities to ensure the protection of the vital interests of the individual, society and the state.

During the entire period of restoration of the state's independence, the Ukrainian police fights crime, contributes to ensuring law and order in the country and strengthening the government, whose laws it is obliged to

fulfill. Difficult and difficult were, are and will be the conditions of struggle on this front, which make increasingly difficult demands on the direct participants - employees of law enforcement agencies.

Today's realities force the educational institutions of the Ministry of Internal Affairs to search for new forms and methods of work, to build the organizational structure of the education system with the aim of taking additional measures, ultimately aimed at effective enforcement of law and order, protection of the constitutional rights of citizens and activation of the fight against crime.

The requirements for education and, especially, for the training of professionals of the Ministry of Internal Affairs system are qualitatively changing: the educational institution is designed not only to give the amount of knowledge determined by the programs to the future employee of the Ministry of Internal Affairs, but also to teach how to think creatively, outside the norm, to teach the ability to quickly make the only correct decisions in sometimes complex, extreme situations, persistently overcome difficulties and temporary failures in official activities.

The success of law enforcement largely depends on the level of professional training, theoretical knowledge and practical skills and abilities of the employees of internal affairs bodies, their ability to navigate the situation in a timely manner, adapt to modern conditions, predict and anticipate criminality in order to prevent and stop crimes. Activities in educational institutions of the Ministry of Internal Affairs are aimed at fulfilling these qualities of a socially and professionally mature personality of a law enforcement officer of the new formation.

In this regard, it is necessary to complete the reform of the system of training of the rank and file staff of internal affairs bodies in accordance with EU requirements, because it is in the process of training at an educational institution that the foundations of the professional skills of a future specialist in the Ministry of Internal Affairs are laid.

The formation of professional skills is provided not only by the presence of professional abilities, but also by the professional stability of the activities of internal affairs bodies, which is one of its important characteristics.

It is professional stability that allows cadets and recent graduates of educational institutions of the Ministry of Internal Affairs to quickly adapt to the conditions of practical service, to make optimal decisions in difficult situations, to maintain endurance and self-control.

However, until now, the problem of the influence of the professional stability of an employee of the OVS on his achievement of a certain level of professional skill has not been studied enough, nor has the influence of this kind of stability on the development of special abilities of future employees of the OVS, namely these abilities contribute to a more successful mastering of the secrets of professional training and special knowledge, been studied. which in turn affects the growth of professional skills.

Such problems are investigated, in particular, in relation to the activity of a teacher in the scientific works of professors of the South Ukrainian Pedagogical University Khmelyuk R.I. and Kurlyand Z.N. (Kurlyand, 1985, Kurlyand, 1985, Khmelyuk, 1978, Khmelyuk, 1984) and regarding the training of IAA specialists – in the collective work of Delikatnyi S.K., Polovnykova Zh.Y., Pryhunov P.Y. (Delikatnyi, 1998).

Also, the possibilities of the educational process in the formation of professional stability are not sufficiently studied. This requires knowledge of the structure of professional stability, that is, its components.

The process of professional formation of an individual, according to professor Z.N. Kurlyand (Kurlyand, 1985) can be considered as a system, however, any system consists of a number of established qualities that are manifested in the ability to maintain its state in a changing environment. At the same time, a number of variable qualities exist within the system itself, due to which there is a transition from one relatively stable state to another.

Under the professional stability of an employee of internal affairs, we understand the synthesis of the properties and qualities of his personality, which makes it possible to confidently, independently, without emotional stress, perform his professional activities in various, sometimes unpredictable conditions throughout the entire professional activity with minimal errors.

Professional stability in police activity, first of all, involves the ability of an employee of internal affairs bodies not to deviate from their personal attitudes, views and beliefs during various influences in the process of this activity. A true policeman, a master of his craft, must first of all be a person ideologically convinced of the supremacy and justice of the law. Such a conviction creates the foundations for the formation of the ideological orientation of the policeman's personality, which mainly determines his moral stability as an individual. However, in addition to the ideological focus, this stability is determined by such qualities of the law enforcement officer's personality as benevolence, tact, sensitivity,

sociability, justice, perseverance, purposefulness, etc. The definition of the concept of "ideological stability" is given by L. V. Tarasenko. in his research on the preparation of high school students for social and political activity (Tarasenko, 1990). There is such a type of sustainability as moral sustainability, which was studied by V. Plisko (1991). In our opinion, "moral stability" is a broader concept than "ideological stability", because morality includes ideological orientation as a component.

A policeman, as a teacher and a priest, whose activities are always carried out in front of the entire public, bears a double responsibility for his personal qualities, for his character, since, in addition to the condition for the success of law enforcement activities, his character and personal qualities are a model, a standard, one might say, for the surrounding citizens.Therefore, immoral qualities, negative character traits, i.e. elements of moral instability, are completely unacceptable for a police officer. Therefore, moral stability is a necessary component of the professional stability of an employee of internal affairs bodies.

In order to maintain the professional stability of an employee of internal affairs bodies, high physical capacity is also necessary, which is impossible without sufficiently thorough physical training. In this case, physical stability is an important component of the professional stability of an employee of internal affairs bodies. Unfortunately, not every police officer is aware of the need for physical improvement, acquiring physical culture skills, in particular, hand-to-hand combat, in order to successfully master the police profession, because without physical endurance, which is manifested in strength, endurance, speed, stability of the course of psychophysical processes, in lowering the thresholds of fatigue , it is impossible to quickly become a master police officer.

The main difficulty in adapting recent graduates of educational institutions of the Ministry of Internal Affairs (as well as cadets-interns) to service in the practical bodies of internal affairs is that in the process of official activity they have to solve many situational, psychological, pedagogical tasks that require taking into account the age, individual, gender, professional, criminal experience differences of the surrounding citizens, the ability to correctly assess their actions and feelings. All this is related to emotional tension.An increase in emotional tension has a negative impact on the results of activities and is manifested in irritation, increased fatigue, anxiety, depressed mood. Feelings of insecurity, fear, reduced attention, increased vulnerability and excitability, etc. appear.

The reasons for such emotional tension can be:

– excessive emotional excitability, imbalance;

– insufficient level of development of professional abilities, knowledge, skills and abilities, which are necessary for successful official activity;

– insufficient level of development of professional stability in police activity.

It is necessary to teach cadets to manage their emotional state - to form the ability to control the causes of emotions, to acquire the ability to predict a situation that causes certain emotions.

Some authors (Dictionary, 1978) understand emotional stability as an individual's ability to manage his emotional state in order to maintain high work capacity and efficiency. But in this interpretation, emotional stability acts as a psychological component of maintaining the effectiveness of activity.

We share the point of view of Androsyuk V.G., Yukhnovets G.O., Kazmirenko L.I., Medvedev V.S. (Professional Psychology, 1995), who argue that the very definition of the sustainability of the efficiency of activities that take place in a tense rhythm implies that it depends on the integrative personal ability, which includes emotional, volitional, intellectual and motivational processes as components. So, we are not talking about emotional, but about psychological stability, as a broader concept. Both emotional stability and psychological stability are important components of the professional stability of an employee of internal affairs bodies.

Psychological stability in official activities determines the success of the work of an employee of the OVS, instills confidence in one's abilities. This stability is not an innate gift.It depends on the ability to consciously manage activities, create an optimal work mode, and regulate one's emotional states.

In our opinion, the concept of professional stability in the activities of an employee of internal affairs bodies includes both emotional stability and psychological stability. All these concepts are interconnected, but the concept of professional stability is broader and does not even coincide with the concept of psychological stability.

Thus, the professional stability of an employee of internal affairs bodies requires special knowledge, skills and abilities within the chosen profession, which are not components of psychological stability, but are necessary for a highly qualified professional. The professional stability of an employee of internal affairs bodies is formed as a synthesis of

personality properties and qualities, and its level can be changed with the help of conscious, purposeful work that takes into account the individual characteristics of the personality and is carried out in professional activities or in activities that simulate such as much as possible.

There is no reason to deny the role of the properties of the nervous system in the formation of professional stability. The strength and weakness of the nervous system can be taken into account to develop the optimal behavior of a professional and change under the influence of purposeful action. Therefore, the mental load must be dosed and maintained at the level that will provide each individual with optimal performance.

The endurance of the nervous system is not limitless, while not every person knows his capabilities, especially in the dosage of mental loads, knows how to control himself in time, correctly assess his strengths and find the optimal style of behavior that will ensure the success of the activity.

The stability of emotional arousal in combination with the conscious management of the emotional state is one of the important conditions for the reliability of maintaining psychological stability and physical performance in extreme conditions, and, therefore, it ensures professional stability of activity. By the way, for the activities of internal affairs bodies, this relationship is particularly significant.

A big mistake is made by those recent graduates of the educational institution of the Ministry of Internal Affairs or cadets-interns who "give vent" to their negative emotions in the presence of colleagues, subordinates, outsiders, relatives: they shout, get annoyed at the slightest reason, direct a real avalanche of complaints at them, and sometimes and insults. Such "regulation" does not contribute to the growth of professional skill, nor to the establishment of contacts with citizens, from whom information must be obtained, nor to a normal business environment with high results.Screaming and cursing only indicate the powerlessness of an internal affairs officer, and also cause corresponding negative emotions. At the same time, not only does the relationship with others deteriorate and the results of official activities decrease, but also a negative attitude towards one's profession appears. Psychologists recommend to "discharge" negative emotions by doing sports, physical labor, as well as walks in the bosom of nature, reading fiction, visiting theaters, museums, etc., i.e. doing something that causes pleasure or pleasant fatigue.

Long-term observation of the process of formation of employees of internal affairs bodies, analysis of domestic and foreign literature allowed us to identify the conditions that, in our opinion, play a decisive role in the effective formation of the professional stability of an employee of internal affairs bodies. Among them: deepening the content component of the educational session; a differentiated approach in training cadets; emotional regulation of cadets' activities; cadets' mastery of the evaluation component and its adequate application in stressful situations.

Deepening the content component of educational classes means: increasing their efficiency, effectiveness, density, as well as training precisely for what is necessary for the practical activities of internal affairs bodies.

During the formation of professional stability in cadets, we also differentiated, studied and took into account their psychological differences and their typological differences as representatives of different social, class, ethnic, age and other groups.i.e., the second condition for the formation of professional stability of cadets of a higher education institution of the Ministry of Internal Affairs was a differentiated approach to training cadets.

Emotional regulation of the cadets' activity was the third condition for the formation of the cadets' professional stability. It covers professional and psychophysiological training. The task of the professional training was to develop professional thinking and observation, elements of expressive and communicative abilities, the ability to make correct decisions in unusual, unpredictable situations, to quickly react to the behavior of others and individual citizens. Methods of professional training: solving professional tasks, game modeling, solving crosswords, etc. Psychophysiological training was aimed at self-education, the ability to control oneself, mastering self-regulation techniques. The purpose of the training was: formation of an emotional state of active, cheerful, optimistic professional activity, formation of emotional contact with objects of activity; psychological mood for service in a difficult, non-standard situation.

The next condition for the formation of the professional stability of cadets of a higher educational institution of the Ministry of Internal Affairs system was the cadets' mastery of the assessment component and its adequate application in stressful situations, which includes: objectivity in assessments and decisions; psychological assessment of observed actions and events; prognostic assessment of the development of the situation; the

ability to diagnose the condition of people; assessment of the consequences of decisions and actions taken. These skills are especially important during the actions of an employee of internal affairs bodies in non-standard situations.In the activities of the internal affairs bodies, tense situations arise extremely often - circumstances that cause significant difficulties in official activities and at the same time demand quick, precise and error-free actions from the representative of the authorities. In the practical bodies of internal affairs, this is a continuous and constant occurrence of such tense situations that successively replace each other. The effectiveness of an internal affairs officer, a police unit, and the head of an internal affairs agency in a tense situation is largely determined by their high level of professional stability, one of the conditions for which is the preparation of cadets of educational institutions of the Ministry of Internal Affairs to act in tense situations.

The dynamism of tense situations, often too strict requirements for timeliness and adequacy of actions make it necessary to prepare an employee of internal affairs bodies for the emergence of suddenly complicated tasks of professional activity. Such training is an essential prerequisite for purposefulness, stability of regulation and effective activity in overly complicated circumstances. And, accordingly, the factor of preventing errors, which in the activities of the internal affairs bodies are equal to fate, health and, even, human life.

The behavior of an internal affairs officer in a tense situation is determined not only by the constant characteristics of the policeman at the moment, but also by the conscious and unconscious reflection of the objective factors of the external environment that affects his psyche. Therefore, it is necessary to reveal the psychological content of a tense situation and the form of its reflection in the human psyche.

A tense situation requires an awareness of the distribution of attention between control over the current state of the object being controlled and the development of a new combination of methods, techniques, and actions.

A tense situation is such a complication of the conditions of activity, which has acquired special significance for an individual or a team. In other words, difficult objective conditions of activity become a tense situation when they are perceived, understood, evaluated by people as difficult, dangerous, etc. Any situation involves the inclusion of an object in it. This readiness refers to a tense situation that combines a certain content of objective reality with the needs, motives, goals, and relationships of a

person. This is precisely what is inherent in the official activity of an employee of internal affairs bodies.

The specifics of tense situations are determined by the ratio, the connection between the objective and the subjective. It is necessary to indicate such situations in the activities of internal affairs bodies as emergency, critical, stressful, difficult, risky.The general thing that characterizes tense situations is the occurrence of a sufficiently difficult task for the subject (employee of internal affairs bodies) or a group of people (unit), their "difficult" mental state.

A tense situation is essentially a psychogenic stimulus. Therefore, the strength and duration of its action is determined by the mental state of a person, his individual characteristics, preparedness. In other words, the content of a tense situation may be the same, but the forms of its reflection in the individual's psyche will be diverse.

Any tense situation is characterized by certain features: suddenness, unexpectedness, breaking attitudes, mental state, etc. It is this combination of mental levels of regulation that characterizes the reaction to any psychogenic emergency stimulus. This makes it possible to imagine a stressful situation as a complex complex stimulus that causes, basically, two levels of reactions: 1) adaptive ones that activate the orienting reflex and automatic skills of the active type, 2) reactions that activate complex intellectual functions that form a behavioral strategy and ensure the process of distribution of attention between control over the current state of the controlled object and the development of a new, adequate situation, plan and methods of action.

To assess the degree of impact of stressful situations, the following indicators are used: a) physiological shifts (vegetative reactions), b) mental changes (indicators of mental processes that determine the success of activities), c) changes in the functional level of activity (results of activities).

The most informative indicators are changes in mental cognitive processes important for the successful performance of tasks, as well as high autonomic shifts, especially changes in blood pressure and heart rate.

A person confronts a stressful situation with his mental readiness, experience, and personal capabilities. It is these factors that determine the effect of such a stimulus as a tense situation. The ability to withstand a stressful situation includes three components: a) physiological stability, due to the state of the body's physical and physiological qualities (constitutional features, type of nervous system, vegetative plasticity); b) mental stability

due to professional training and the general level of a person's qualities (special skills for acting in stressful situations, the presence of positive motivation, a sense of duty, etc.); c) psychological readiness (active state, mobilization of all forces and capabilities for further actions).

It is very important to consider the process of forming and maintaining the professional stability of an employee of internal affairs bodies to work in stressful conditions, which in most cases is the police service, to justify the ways and means of overcoming stressful situations and getting out of them. Such situations are either highly stressful, dynamism, or long-lasting.Both of them make extremely high demands on the personality of an employee of internal affairs bodies.

Readiness to act in stressful situations develops and strengthens thanks to the arming with general and professional knowledge, abilities and skills, improvement of professional skills.

Two different, although closely related, aspects are distinguished: the formation of professional knowledge, abilities and skills and the formation of a purely psychological readiness to perform one's official activities. As for the first part, it is acquired by future officers of internal affairs bodies precisely in educational institutions of the Ministry of Internal Affairs system.

The question of forming the psychological readiness of an employee of internal affairs bodies to successfully perform his duties in a stressful situation has two directions: the formation of psychological and psychophysiological prerequisites for successful activity, the influence on the psyche of an employee of internal affairs bodies during his practical activities.

The second direction, related to psychological readiness, is the management of professional behavior, management that, under a certain option, ensures the rational use of one's capabilities, one's resources for solving professional tasks.

Let's first consider the role of training and educational activities of cadets of educational institutions of the Ministry of Internal Affairs.

The principles and ways of forming the readiness of cadets to act in particularly difficult conditions of official activity during training can be called:

1. Part of the future activity should consist of actions that are the same in their psychological structure as actions in real official activity. In educational activities, first of all, it is necessary to create a system of actions for training attention, perception, memory, and thinking, as well as

to determine actions with the help of which complex professional tasks are performed.

2. Educational activities should be based on physical and psychological modeling of the conditions of the cadets' future service. The chosen model must psychologically correspond to the one with which the future police officer will work in a real situation.

3.The task of educational activity is the formation of not only automated actions, but also those psychophysiological mechanisms that contribute to the activation of the properties of the psyche, which carry out the adaptation of the organism to any variant of service conditions.

4. In the conditions of educational activity, it is necessary to take into account the relationships: employee of internal affairs bodies - means of service - process of service - environment - product of service. In order to achieve the proper effect in learning, these relationships must to some extent correspond to the principle of similarity. Since we are talking about training an employee of internal affairs bodies to act in extreme situations, it is very important to take into account the psychological requirements of similarity in relation to stressful situations.

5. Educational activity should include tasks that develop such functions of the psyche as cognitive, regulatory, communicative (Professional psychology, 1995). This formulation of the question assumes that preparation for actions in stressful situations will ensure the development of appropriate qualities of perception, attention, memory, thinking, ways of making decisions, etc.

The regulatory function of the psyche is formed through an adequate mental reflection of the objective world in the form of mental image-goal and image-object, operational conceptual models. Motives, goals, attitudes, emotional and volitional properties, abilities are formed in the activity itself, which form the basis of a person's readiness for stressful situations.

The communicative function of the psyche is formed by modeling the social conditions of communication and activity.Under their influence, specific qualities of the communicative function develop, which ensure effective interaction of employees of internal affairs bodies, their interpersonal relations, as well as moral guidelines and qualities. The constant development of communicative functions contributes to the formation of a socially necessary link – the team, the cohesion of professionally trained specialists who are socially oriented to the performance of official tasks. Therefore, preparation for actions in stressful situations involves purposeful formation of physical, mental and social

qualities of the individual. The role of creating conceptual models and operational images that can be used to construct the future should be highlighted.

Among the many objective and subjective factors that determine the formation and level of readiness to act in extreme situations, motivation should be singled out first of all. The dominance of the motive to complete the given task forces a person to be active, to select and remember information in accordance with the requirements of the task.

Behavioral motives before performing a difficult task are complex and often contradictory in nature. It happens that different motives seem to be fighting in the psyche of a person, a person even tries to evade participation in the performance of a difficult task associated with risk and difficulties. Behavior can be polymotivated, that is, prompted by several motives, by the way, the influence of different motives is not the same. The motive that has acute subjective significance for a person turns out to be the most influential. It is this motive that gives personal meaning to the task, that is, it determines what meaning it acquires for this person. The personal significance of the task is averaged by all the qualities and experiences of a person, his relationships with other people. Therefore, for the establishment of mental readiness, it is necessary that the employee of the OVS considers the task to be personally meaningful. His attitude to the matter in this case is qualitatively different compared to the performance of the task only out of necessity.

Therefore, the state of readiness depends on the motives of a person's behavior, his requests, his attitude to the environment, to the given requirements, to his capabilities.From this, it becomes clear how important it is during the preparatory work to pay attention to the issues of motivation of the behavior of the employee of the internal affairs bodies, the education of his responsibility and an active attitude to the assigned task.

Let's stop at the analysis of some forms of classes used to prepare future police officers for activities in tense situations. First of all, these are lectures and practical classes, for which the main volume of study hours is allocated. The targeted learning process at lectures on profiling disciplines creates favorable conditions for the formation of ideas about the future service, about the nature of activity, specific working conditions, typical situations encountered in practice, including stressful ones.

At the lectures, the main attention is paid to the study of the theoretical foundations of general education, legal and legal-applied sciences, which becomes the theoretical basis for the further formation of

skills and abilities. The lecturer forms a relationship to official duties, develops a psychological attitude to work as the first and most necessary life need of a person, to self-sacrifice for the sake of justice and legality. At the practical classes, safety measures, the material part of various types of weapons are studied, they learn how to use them, practice shooting with various types of weapons is carried out, and self-confidence as an employee of internal affairs bodies, confidence in the high reliability of equipment and weapons is instilled. Cadets are introduced to typical malfunctions that may occur during the operation of equipment, including weapons.Profiling disciplines have ample opportunities for the development of cadets' perseverance, observation, collectivism, initiative, and personal responsibility for the performance of duty. For this, in addition to the necessary explanations and problem solving, various types of visualization, technical teaching aids are used, demonstration classes on various topics are organized.

During classes, it should be shown on practical examples that professionally necessary mental processes and personality traits contribute to the successful performance of official tasks, which contributes to the success of self-education of readiness.

The practice of organizing meetings with university graduates, engaging them to conduct separate classes related to the transfer of practical experience, investigation technology, has justified itself.

Experience suggests that for the purposeful formation of readiness for future official activities, it is desirable to hold debates or conversations on the following topics: "What do you know about your future profession?", "What types of stressful situations occur in the activities of internal affairs bodies and ways to overcome them?", "On the personality qualities of a young employee of internal affairs bodies", etc. It is appropriate to hold thematic evenings to share the experience of becoming a young specialist in the service, various quizzes, competitions aimed at instilling interest in the future profession.

Therefore, in order to prepare an employee of internal affairs bodies to work in stressful situations, it is advisable to apply the following methods and techniques: increasing the pace of activity; solving tasks in the absence of information, in the presence of obstacles, elements of risk and danger; the introduction of unforeseen obstacles and sudden complications into the training course; carrying out exercises on comparing and classifying individual goals of one's official activity depending on their importance, complexity, and terms of achievement; setting tasks that

require independent selection of a certain method of solution from several possible ones; creating situations that lead to partial failure and require increased activity in the future; setting a task and creating a situation that requires an immediate transition to bold independent and organized actions; organization of competition; creating models of future activity depending on changes in its external and internal conditions.

Observations of the training of cadets of the Ministry of Internal Affairs system show that the quality of their readiness is negatively affected by long-term performance of the same type of tasks and an excessively large variety of them. In the first case, they lack creativity in a new situation, in the second case, they lack firm consistency and clarity in their actions. The combination of diversity and repetition of complex tasks and performance conditions effectively produces readiness, stable psychophysiological structures, and generalized methods of action necessary for an employee of internal affairs (Vasiliev G.I., 1997).

It is equally important for the success of the formation of readiness to ensure the gradual increase in difficulties. Overcoming negative mental states, preparing for actions related to risk and danger, should be done, as a rule, gradually, taking into account the personal qualities, knowledge and skills of the employee of internal affairs. An unjustified optimistic mood sometimes turns into fear and uncertainty in case of failure. The use of difficult tasks is achieved only by gradual and careful approaches to them.

Striving to immediately achieve the desired behavior by the "you have to throw it into the water to teach it to swim" method does not always give the desired result. If an employee of internal affairs has emotional and willpower stability, he more easily overcomes the psychological consequences of failures and breakdowns. As for a cadet with an insufficiently tempered will, vulnerable, emotional, he should be led from simple tasks to more complex ones.

It happens that a cadet has a persistent fear of weapons, the dark, heights, water, or other situations that most people can handle easily. Such forms of fear are the result of severe trauma experienced in childhood, sometimes later. A whole system of measures is needed here: clarification of the unfoundedness of fear, its harm, friendly help in overcoming obstacles, approval of the cadet's successful actions, etc.

Readiness is also formed by means of physical training, sports, which develop mental stability, speed and accuracy of reaction, attentiveness.Therefore, the preparation of an employee of internal affairs bodies to act in tense situations requires a comprehensive influence on the

cadet's psyche, arming him with a system of knowledge, experience of successful actions in difficult conditions. Such training is an important condition for the formation of professional stability of an employee of internal affairs bodies. The fight against anti-social manifestations in the life of society puts increasingly difficult demands on the training of law enforcement officers.

Educational institutions are designed not only to provide a set of knowledge defined by the programs to the future employee of the Ukrainian Armed Forces, but also to teach how to think creatively, out of the box, to teach the ability to quickly make the right decisions in difficult, extreme situations, to persistently overcome difficulties and temporary failures in official activities. In this regard, it is necessary to change the training system of the rank-and-file and senior staff of the OVS, focusing on comprehensive and more effective training for practical activities, because it is during the training process that the foundations of the professional skills of the future OVS specialist are laid.

The formation of professional skills is ensured not only by the presence and development of professional abilities, but also by the professional stability of the activity of the OBS, which is one of its important characteristics. In our opinion, the professional stability of an employee of internal affairs bodies includes the following components: moral, physical and psychological stability. All components of stability are important for the police profession, because they contribute to the formation of an individual as a professional.

It is professional stability that allows cadets and graduates of educational institutions of the Ministry of Internal Affairs to quickly adapt to the conditions of practical service, make optimal decisions in difficult situations, and maintain stamina and self-control.

The search for ways to improve the training of the future police officer based on the disclosure of the essence of his professional stability, the structure of this stability, as well as the factors affecting its formation and the conditions causing its existence, leads to a more effective formation of the social and professional maturity of the future employee of the internal organs affairs, which is one of the directions of social aspects of Ukraine's integration into the EU.

2.15. Socio-political aspects of internal migration and its influence on the political processes of the Post-Soviet era as obstacles on the way of Ukraine’s integration to the EU and NATO

In the conditions of Russia's military aggression against Ukraine, the international community is helping our country to resist and overcome the enemy in various ways. One of the results of such cooperation should be Ukraine's membership in the EU and NATO. The EU's cohesion policy on assistance to Ukraine is quite timely, well-founded and effective. Ukraine, for its part, must make a lot of efforts under martial law to maintain the trust of its Western partners and fulfill the requirements for membership in the EU and NATO. In such conditions, it is appropriate to consider the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which became the basis of the corruption of the modern Ukrainian political elite in order to identify such negatives on the way to fulfilling the requirements for Ukraine's membership in the EU. Based on such socio-political aspects lie down universal human values as the achievement of theoretical democracy: human rights, the rule of law, tolerance and other - ponses are rather deep, have different interpretations, differently perceived, and, moreover, differ in life or do not work in general, they are implemented not in full measure or with national distortions. In post-Soviet countries it is traced in various variants. Particularly interesting in this perspective is independent Ukraine – a country in which political processes with attempts to implement democracy achievements are not only in an unpredictable variant. Ukraine has its own national charisma, a beautiful work-loving and patient people. But this can not become the basis for the realization of human rights, the rule of law, tolerance and other democratic values. In contrast to such positive qualities of post-Soviet Ukraine, it has a significant negative component in the democratic transformations of the present - the ruling criminal-oligarchic political and power system. The main source of such a political monster in Ukraine we can consider the negative antidemocratic traditions of the USSR, which the small group of citizens of Ukraine adopted. To call antidemocratic Soviet traditions of compulsory right to education and labor, possibly from theoretical point of view, and unreasonably and inappropriate. But we want to focus on the fact that in Ukraine, the national tradition is to perceive everything on the contrary and negatively, so that it does not happen worse - it is laid on the genetic level. Therefore, in the first years of independence, some representatives of the Ukrainian people, to realize their right to education and labor (age frameworks 17-45 years), replenished

rows of internal migrants. A small percentage of them could not accept their mediocrities, not recognized "screwdrivers" features of intelligence, which did not recognize the Soviet and post-Soviet traditional secondary school. It became the source and the basis of the emergence of a criminal-oligarchic-power clan in Ukraine at the beginning of the twentieth century, and, accordingly, the source of the political force that will never allow democracy in its clean form, as it contradicts the very essence of the existence of a criminal basis. oligarchy (Michels R. 1911: 50-70). Regarding the formulation of the problem, let us note: considering such a democratic, ambiguous perspective in the confirmation or non-affirmation of universal values, as the basis of the socio-political aspects of internal migration and its influence on the political processes of the affected era, which created the foundations of the corruption of the modern Ukrainian political elite, to identify such negatives on the way fulfilment of the requirements for Ukraine's membership in the EU and NATO.

We tried to put forward a hypothesis regarding the impossibility of establishing and creating human rights, the right of supremacy, tolerance and other democratic principles in post-Soviet Ukraine, as this opposes the existing national criminal-oligarchic political-power clan, the source of which was internal education and labor migration. This will help identify socio-political negatives and overcome them on the way to meeting the requirements for Ukraine's membership in the EU and NATO. In order to determine the main priorities in the study, it is necessary to note that in the afternoon of the USSR, internal educational and labor migration also existed, but each participant was kept under a non-assembly cap of the Specific Bodies of the KGB of the USSR, so the least deviations from the norm or violation of the immediate or punishment were punished, they are not punished Always could actively participate in the socio-political life of the country. In post-Soviet times, the participation of migrants of domestic educational and labor migration in the socio-political life of Ukraine has increased significantly. The political activity of migrants was determined by the political, economic and cultural situation in the country. The main issue of the development of civil society, which was in the process of creation and covered various communities, including migrants of domestic educational and labor migration, was such a status that guarantees at the same time their inclusion in civil society and identification with the territory of residence. It is peaceful coexistence of migrants of external migration of various nationalities and migrants of internal educational and labor migration enabled the state to develop, laid the foundation of political and social stability. Ukrainian society guaranteed migrants to ensure cultural development, obtaining appropriate status in society and access to resources,

including political ones. The activities of migrants were not limited to the problems of culture and language. In the early or later, this process moved to a political plane, so we consider the migrants of Ukraine as an important political factor.

The object of the study is the criminal-oligarchic political-power clan of Ukraine, the source of which is internal educational and labor migration, in the essence of which there is no possibility of affirming democratic freedoms as the basis of the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern Ukrainian political elite in order to identify such negatives on the way to fulfilling the requirements for Ukraine's membership in the EU and NATO.

The subject of scientific research is the regularities of the inability of the criminal-oligarchic political-power clan of Ukraine to assert, promote and exist universal democratic rights and freedoms as the basis of the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern Ukrainian political elite in order to identify such negatives in the way of meeting the requirements for Ukraine's membership in the EU and NATO.

Analysis of recent research and publications in the conglomeration raised scientifically incompatible issues of democratic freedoms and criminal oligarchic political and power clan of Ukraine with its one of the sources - internal educational and labor migration - and the corresponding impact on political processes in the country confirms the extraordinary and expediency of the expertise chosen by us. Scientific search. . In world political science, democratic freedoms, oligarchs and political process were represented by representatives of both American and European political school (including Russian and Ukrainian). Migration issues were more engaged in sociologists and ethnopolithologists. Therefore, the source scientific base of this study was the work of Castles S. "Global Trends and Issues. International migration at the beginning of the XXI century: global trends and problems", Collinson S. "Europe and International Migration". Since the establishment of Ukraine, an independent state, the role of migrants in our country has increased significantly. Watching migration processes in our country in recent years, we can see that there is an intensive political integration of migrants into domestic processes and significantly enhanced their role (both positive and negative) in national political and power relations: yesterday's migrants of domestic educational and labor migration Ukraine – in their deviant negative incarnation became the source of the criminal-oligarchic political-power clan of Ukraine,

which is unable to lead the country to democratic transformations with the affirmation of generally accepted rights and freedoms as the basis of the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the principles of corruption of the modern Ukrainian political elite in order to identify such negatives on the way to fulfilling the requirements for Ukraine's membership in the EU and NATO.

This very provision became the basis for the selection of previously unresolved parts of the general problem - the impossibility of realizing general democratic rights and freedoms by the criminal-oligarchic political-power clan in Ukraine as the basis of the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern of the Ukrainian political elite in order to identify such negatives on the way to meeting the requirements for Ukraine's membership in the EU and NATO and determined the relevance of this study. The purpose of the study is to trace a negative phenomenon in the internal educational and labor migration of post-Soviet Ukraine – a phenomenon with criminal consequences among a part of migrants who set illegal enrichment as their own goal and laid the foundation of the national criminal-oligarchic political-power clan as the basis of the socio-political aspects of internal migration and her the influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern Ukrainian political elite by appointing such negatives on the way to fulfilling the requirements for Ukraine's membership in the EU and NATO.

The task of the work: to theoretically generalize the possibility of a destructive political process in the variants of internal educational and labor migration of Ukraine – with the participation of the national criminal-oligarchic political-power clan and trace its unforeseen consequences, which lead to the loss of the possibility of establishing universal human values in our country: human rights, democracy, rights of supremacy, tolerance and others as the basis of socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern Ukrainian political elite by identifying such negatives on the way to fulfilling the requirements for Ukraine's membership in the EU and NATO.

Presenting main material. Generally accepted values – such as human rights, democracy, the rule of law, tolerance and others, were interpreted in the USSR one-way and specifically. The concept of a single great country has gripped the personality and individuality of everyone, everything was oriented

to the greatness and power of the country, and each of its citizen had to perceive itself a screw of a large insurmountable car. In this position, they have both advantages and disadvantages. Despite all - in such traditions, several generations of our compatts grew and we have no moral law only negatively evaluate their lives and achievements. It should be noted that most of us, thanks to such one-sided universal values, survived and cured, took place in life and did not break. We can not cross the past, and especially - to change it, so they perceive it as a fact. Independent post-Soviet countries arose on the wreckage of the collapsed USSR. The foundations of their foundations should be laid down the best democratic values in the most specific and direct sense of them. (Collinson S.1994:39-45) But 30 years, apparently, it seems to be realized. The phrase "wanted - as it is better, but it turned out - as always" can not relate to all post-Soviet countries – it is a specificity of only Ukrainian. In 1991, Ukraine could become one of the economically capable of European countries, which provided for the implementation of the basics of democracy in the classical understanding. However, the transition from the socialist (planned) economy to the capitalist (market) thrown Ukraine in the stage of "wild" capitalism, which only speaks of general democratic values, and, in fact, they finally destroys them. In the first half of the twentieth century, the investigator of the bourgeois society Collinson S. Theoretically substantiated the impossibility of the implementation of democratic values in underdeveloped capitalist countries, which today belongs Ukraine. Already in 1991 it was evident that rich and prosperous independent Ukraine will become the raw appendage of "sharks" of capitalism. And to accuse this USSR or to go to an unable Ukrainian people – in vain. Otherwise, it could not be – so theoretically explained a similar situation Merton R. This study aims to consider one of the possible sources of the destruction of universal values in post-Soviet Ukraine as the basis of the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern Ukrainian political elite in order to identify such negatives on the way to fulfilling the requirements to Ukraine's membership in the EU and NATO.

It should be noted that the universal values that are not always observed in post-Soviet Ukraine, directly related to the personality of each citizen of Ukraine, regardless of its national origin, place of birth and permanent residence or registration. We deliberately highlight migration and internal migration in Ukraine to reveal the main reason - why in post-Soviet Ukraine can not fully operate in general civilization democratic rules for human rights, democracy, rule of law, tolerance, etc. Stop in matters of internal migration,

which is the main lever that destroys the democratic principles of Ukraine, we will be able to explore the general provisions of migration and its political mobilization.

The term "Migration" comes from the Latin word Migratio, which means moving, resettlement. Migration as a "geographical movement of individuals or groups of individuals, that is, the mobility of people in a narrower or wider geographical space" – determination of the term from the sociological dictionary. Such an interpretation is in the demographic encyclopedic dictionary: "Migration of the population – the movement of people (migrants) across the boundaries of certain administrative-territorial units with a change in place of residence permanently or more or less for a long time".

First, let's dwell on the generally accepted concept of migration, which involves moving people (migrants) across the border with a change in the place of residence permanently or more or less for a long time, referring to the movement of foreigners in post-Soviet Ukraine who failed in their countries to take place socially and economically, or who saw the potential in Ukraine that could give them a start to resolve personal issues and others. This group of migrants of different nationalities on one side tries to adhere to Ukrainian legislation, and on the other hand tries to solve their questions in various ways, demanding the interests of the country's indigenous citizens. The external migration lever in Ukrainian society is due to the processes of formation of state independence. The growth of migration processes in recent years is associated with the growth of their place in the Ukrainian political process. (Grinda, 2001) A certain role in the conditions of political mobilization of migrants played factors: "The motive of danger", "Principle of Justice". In this regard, there is a need to consider the political mobilization of migrants, which may be due not only to the competition of various ethno-national groups, it can also become a result of state policy. Important factors of political mobilization of migrants can be called such as institutional (association around a particular political party or organization), leadership (association around a certain person, leader), problematic (association around common to migrant problems). The influence on the level of political mobilization of migrants also have foreign policy factors, etc. These provisions determine the positivity or destructiveness of the political process. With the beginning of democratization, the participation of migrants in the socio-political life of Ukraine has increased significantly. The political activity of migrants was determined by the political, economic and cultural situation in the country. The main issue of the development of civil society, which was in the process of creation and covered

various communities, including migrants, was such a status that guarantees at the same time their inclusion in civil society and identification with the territory of residence. It is the peaceful coexistence of migrants of different nationalities enabled the state to successfully develop, became a source of political and social stability. Ukrainian society guaranteed migrants to ensure cultural development, obtaining appropriate status in society and access to resources, including resources, including and political. The activities of migrants were not limited to the problems of culture and language. This process moved to a political plane, so it was necessary to consider migrants as an important political factor. Since the establishment of Ukraine, an independent state, the role of migrants in our country has increased significantly. Observing migration processes in our country in recent years, we can see that there is an intensive political integration of migrants into domestic processes, and also significantly increases their role (both positive and negative) in international relations. The political integration of migrants has recently been particularly dynamic. Most politicians are well aware of the impact of migrants on socio-political and economic processes in the state. . Characterizing the activities of migrants in Ukraine in recent years, we can argue that the level of their political activity has grown significantly, which is characteristic of the most numerous and socially active groups - migrants: Russians, Jews, Moldovan, etc. Research material for this scientific search was the documents that reflect the activities of migrants - appeals, programs, conference materials, migration services plans, mass media materials, etc. All these materials indicate that separate groups of migrants are characterized by special activity, as well as mobilization processes are clearly traced. Migrants, protecting their interests, except for cultural, linguistic and religious problems, often put forward requirements for proportional distribution of power between representatives of all nationalities living in the state. At the beginning of the 3rd millennium, mobilization processes of migrants increased significantly, in particular, this is the association of representatives of various migrant groups to carry out certain goals in the field of socio-political relations. Political mobilization of migrants manifests itself, first of all, in establishing close communications, conducting joint events or shares, expressing its active position on acceptance of certain political decisions. The processes of political mobilization of migrants are intensified most often on the eve of important national shares, in particular, elections of different levels. One can observe the creation on the basis of the association of migrant groups of various political associations and organizations through which representatives of migrants are

able to participate more actively in political processes in the state. .Znachnu role in a political mobilization of workers, as well as other groups generally played by such factors as "motive danger" and so-called "principle of justice." Political mobilization of migrants may be due not only to competition of various ethno-national groups, it can also become a result of state policy. Important factors of political mobilization of migrants can be called such as institutional (association around a particular political party or organization), leadership (association around a certain person, leader), problematic (association around common to migrant problems). Influence on the level of political mobilization of migrants also have foreign policy factors, in particular, the policy of individual states and political leaders of the country from which migrants came. Equally important role in the political mobilization of migrants play the authority of organizations representing one or another group of migrants, the presence of influential leaders among migrant representatives. Analyzing the activities of migrants, it can be asserted about a number of other factors that stimulate the development of political mobilization of migrants. (Mazin, 2001) In particular, this compromise is the readiness of a certain group of migrants to cooperate with others, openness in cooperation. The activity of migrant development, institutionalization contribute to the creation of individual groups of migrants, national societies, national movements or political parties. A significant role in the political mobilization of migrants plays an ideological factor. Almost all migrant unions create a certain ideology that fastens their group solidarity. The ideological factor is quite strong and stimulates to combine and further action. However, one can observe that as a result of political mobilization, migrants can not act as monolithic formations. Not rarely association in more powerful structures is accompanied by a struggle for leadership in a newly created organization between representatives of migrant groups. Often occur in the middle of migrant groups. Such processes are often caused by the fact that separate groups of migrants are trying to receive recognition and support from the parties to the authorities. Political mobilization of migrants and the greatest degree of Rosin, activated in the east and south of Ukraine. They clearly clearly identified their place in politics, opposed the local authorities against the usurposed central government, believing that it ignores the laws of Ukraine intended to protect the interests of migrants. "Only with the help of combining efforts ... it is possible to achieve real results – say the classics of political science. The purpose of political mobilization – to achieve the impact of migrants to power in the state, in proportion to their contribution to the development of the state and its economy. "(Huntington, 2000) At a certain time, some groups of

migrants said that there are no discrimination cases in Ukraine Persons on a national basis, practically do not solve the problems of education in their native language. In the regions, representatives of migrant groups are not involved in participation in the activities of both representative and executive power structures. " They offered to "establish direct contacts with political parties, non-governmental and public, including human rights organizations, in order to explain their position and normalize the political situation around the problem of migrants." The development and adoption of legal regulations by the Verkhovna Rada were initiated and adopting legal regulations to ensure compliance with the legitimate rights of migrants in Ukraine. Having revised the state mass media in support of migrants, there were representations of various political parties. Migrant groups expressed dissatisfaction with government activities. This became an impetus to make migrants adopt an active real political participation in the all-Ukrainian expression. As a result, such political shares have become an example of a destructive political process in our country. The leadership of Ukraine with an orientation to the West began to adopt legislation that has fully limited democratic development of migrant groups in Ukraine. The political process became not manageable. It is important to note the fact that newly created migrant groups acquire the nature of political forces, or rather, become so-called political parties of national content. Representatives of migrant groups well aware that most of the problems that are in front of them today will be resolved depending on the proportionality of their representation in the authorities of different levels. This is precisely the main factor in the political mobilization of migrant groups at the present stage. As a result of the study, there is a need for subsequent conclusions: analysis shows that groups of migrants of national minorities, seeking their political formation, trying to determine their political interests. In particular, the group of migrants of national minorities seek to create their political parties, political elite, mass media, etc. World experience suggests that this is a rather acceptable and optimal form of political life of groups of migrants of national minorities. (Castles, 2001) In such an angle post-Soviet Ukraine partially implements general civilizational democratic norms: human rights, democracy, the rule of law, tolerance and Others, if concerned with migrants-foreigners. In the variant of the indigenous Ukrainian population, these rules do not act, because Ukrainians are not able to defend their rights and freedoms as foreigners. Institutions of Democratics in post-Soviet Ukraine are therefore a phase of formation. Having considered the general principles of migration (refinement – external) and its political mobilization, we can return

to the main issue of research – why in post-Soviet Ukraine can not fully operate in general civilization democratic rules for human rights, democracy, rule of law, tolerance, etc. Let us turn to one of the sources of destruction of democratic foundations of Ukraine – internal migration, which became the basis of a modern political and power elite - a domestic criminal oligarchy. For 30 years, we knew this, but did not voice, as afraid of persecution. Today (although the rear-time – better later, as never) officially began to discuss the draft Law of Ukraine "On the Principles of the State Strategy of Deoliarchization of Ukraine for 2015-2020 (Strategy of Deelf-Higerization of Ukraine)" (... Let's ... And although the law is not accepted yet, but the pursuit of part of the oligarchs has already begun. As with these issues, these issues are closely linked, as they influence the correction of norms of universal values, will try to explore. At the end of the XX- at the beginning of the twentieth century, the global processes of industrialization and urbanization were absorbed by Ukraine. Most of these migrants of internal migration (labor and educational) in some way have come some such finances for their own use, which put them in the list of the richest people of post-Soviet Ukraine according to Castles S., migrated to other places of residence , using not always legitimate ways to achieve its goals (enrichment): illegal financial transactions, steals, fraud, and other actions excluded from the institutional sphere of permitted behavior. The choice of behavior in such representatives of internal migration was limited only by considerations of technical feasibility. The method, most practical from a technical point of view, regardless of whether he or not received an advantage over institutional proposed behavior. (Castles, 2001) That is, "yesterday school trials" by general, migrating to education or Better employment to more civilized cities and centers of Ukraine, could not accept the confession of its medicrity and not always legitimate ways self-managed in various variants of business of that "wild capitalism" who tried to establish in our country since 1991. By reaching the goal, they were not just financially enriched, and by communalism, buzz and bribes took key positions in the existing power structures of Ukraine - thus arose Ukrainian criminal-oligarchic political-power clan, as a form of social organization, regardless of its initial democracy or autocracy. , which inevitably degenerates into power of the few elected, according to Michels R. (Michels, 1911), since we have set his task to trace the mechanism of influence of internal labor and educational migration, which is the main lever in the destruction of democratic foundations of Ukraine Let's consider, the relationship of non-compliance with general civilizational democratic norms: human rights, democracy, rule of law, tolerance and others, yesterday migrants

and, accordingly, today's Ukrainian criminal-oligarchic politics and power clan. Mention again Merton R., which traces in yesterday's migrant migration with mediocre intellectual abilities, exaggeration of the meaning of the goal, which generates genuine demoralization, that is, deinstitutionalization of means of its achievement. Emergency value in such an environment is provided to the accumulation of wealth as a symbol of success, prevents the establishment of fully effective control over the use of institutional regulated methods of acquiring a state. Cheating, corruption, immorality, crime, shortly speaking, the whole set of prohibited means is becoming increasingly common, when the value provided by the stimulated by this culture is to achieve success diverges with the institutional coordinated value of the means. (Rastow, 1996) Such individuals may have an idea of generally civilizational democratic norms: human rights, democracy, rule of law, tolerance and others. Moreover, they can be well aware of this area, can initiate attempts to legally establish them, but they can not adhere to them, because they will have to ask for its illegally saved financial achievements. Such an internal contradiction is laid in the most criminal-oligarchic political and power system (it can not oppose itself, because it will lead to its self-destruction). There is a significant question about the announcement of the announcement of the Ukrainian political power in the form of an announcement of deoligarching based on a project that has not been legalized and the term of the action did not come. General civilizational democratic norms: human rights, democracy, the rule of law, tolerance and others can not in the post-Soviet Ukraine to function normally and due to the complication of the main instrument of the criminal-oligarchic political-power system of executive power, which completely proclaimed. By creating the theory of bureaucracy, the prominent world sociologist Weber M. could not even imagine how yesterday's migrants of domestic migration are presented today by the current top of the Ukrainian criminal-oligarchic power will be able to "improve" its creation to the Ukrainian manner and turn the bureaucracy not only to the active and effective tool for its active and effective instrument of its own. domination, but also to make it an instrument of correction of the rights and freedoms of Ukrainians. (Huntington, 2000) Those "improvement" offered by the executive power in Ukraine today, such bureaucratically engage ordinary citizens in a hopeless situation, which arises about their rationality and, often, absurd. For example, in order to solve everyday social and home issues, it is necessary to collect the mass of unnecessary certificates that have a limited expiration date or to do the resolution of everyday issues with forced and mandatory registration on public

sites, because only such citizens can put in line to reception to representatives of the authorities or , even to a doctor. This is a variant of bureaucratization to absurd. Most provincial regions of Ukraine are experiencing a demographic decline. In the countryside, which extends to the use of urbanization, generally reside in most elderly people. Mobile phones of an outdated push-button, they use both a lack of funds, and for the technical failure to use the latest gadgets, and because of partial age-old vision and hearing. Where there is already there to the internet or e-registration on the right site. Citizens complain: "To arrive at an official or doctor in the district or regional center - you may not accept you, because you did not sign in an electronic queue." This is the realities of post-Soviet Ukrainian democratization. A clear distribution of responsibilities between parts of the Ukrainian executive and bureaucratic apparatus is also absent. Frequent reorganization, reduction, merging structures under the slogan reduction of the bureaucratic apparatus of the executive power put Ukrainian citizens in a situation of noise. For example, the Law of Ukraine "On the Fundamentals of Social Security of Disabled in Ukraine" 1991. With the latest changes and additions of 2020, there are effective assistance to citizens with health and, in parallel, social protection services that should help to obtain and implement certain privileges to such citizens - are reorganized, only 1 territorial center remains in the territory of several districts. To whom it's very difficult. This leads to great difficulties in the life of a large group of disabled and pensioners of Ukraine. The issue of limiting rights and freedoms of pensioners is not even worth raising – the Zborocized Pension Fund of Ukraine is not just mocking people of the elderly, but it seems that it is created in order to help retirees faster from heart attacks after communication with PFU staff (information indicates on The basis of reviews of ordinary pensioners of post-Soviet Ukraine as participants and eyewitnesses). This information can state that the universal norms of a civilized society - such as: human rights, democracy, the rule of law – in post-Soviet Ukraine only formally. The concept of "tolerance" in Ukraine in general exists only theoretically. In general, the understanding of tolerance is the ability to perceive without aggression of thought, features of behavior, lifestyle, which differ from their own. Genetically unbalanced characters of Ukrainians do not give them the opportunity to realize such a norm of conduct at home level, and already at the state bureaucratic level officials are trying to support its not always a logical position in communicating with citizens that ordinary citizens are forced to obey the bureaucratic arbitrarity, low lowering their heads (as if demonstrating tolerance), Because the primordial rule of the bureaucracy "I - the head, you are a fool" continues to distort the positive theoretical

achievements of the Weberian bureaucracy in the Ukrainian version, which provides for the simplification of communication of authorities with citizens and vice versa. The Shevchenkivsky vision of the Fatherland "The village seems to be quiet, as if people were excited" again became relevant. The average citizen of post-Soviet Ukraine, having high intelligence and having a thorough education, can not share anything. Since, being a rior of today's powerful criminal oligarchs, he also passed through the school of educational and labor internal migration, refrained within the framework of social norms of conduct, was good or normally studied, was a leader in the workplace, where he worked for scant salary, did not violate the law and Thus remained an ordinary citizen without large financial achievements. On the situation in Ukraine, the average citizen of post-Soviet Ukraine can not affect, because the basis of democracy - electoral law in Ukraine today is removable and distorted in favor of the criminal oligarchy. Such a citizen forced to relieve this fact, adapts to situations of everyday life, to become a conformist or drown their disobedience in alcohol and self-forgetting drugs. But this is not a manifestation of tolerance - it is a forced adaptation to post-Soviet realities of Ukrainian reality. Consequently, from the above, we can generalize the opinion on the absence of the universal norms of a civilized society in post-Soviet Ukraine - such as: human rights, democracy, rule of law, tolerance, etc. as the basis of the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern Ukrainian political elite in order to identify such negatives on the way to fulfilling the requirements for Ukraine's membership in the EU and NATO

- in the country they exist only formally, which is an obstacle to integration into the European community.

As a result of scientific research, we have confirmed the hypothesis regarding the impossibility of establishing and existing in post-Soviet Ukraine human rights, the rule of law, tolerance and other democratic principles as the basis of the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern Ukrainian political system elites in order to identify such negatives on the way to meeting the requirements for Ukraine's membership in the EU and NATO,since this is opposed by the existing national criminal-oligarchic political-power clan, the source of which was internal educational and labor migration. Watching migration processes in Ukraine in recent years, we can see that there is an intense political integration

of migrants into domestic processes and significantly increases their role (both positive and negative) in national political and power relations: yesterday's migrants of the domestic educational and labor migration of Ukraine - In its deviant negative embodiment, the source of the criminal-oligarchic political and power clan of Ukraine became unable to lead the country to democratic transformations with the establishment of generally accepted rights and freedoms. We tried to trace a negative phenomenon in the internal educational and labor migration of post-Soviet Ukraine - deviation with the criminal consequences in the medium of migrant parts, which in the end of the false enrichment and laid the foundation of the national criminal-oligarchic political and power clan.

We made an attempt to theoretically generalize the possibility of a destructive political process in the variant of internal educational and labor migration of Ukraine - with the participation of the national criminal-oligarchic political-power clan and traced its unforeseen consequences, which lead to the loss of the possibility of establishing universal human values in our country: human rights, democracy , the rule of law, tolerance, and others, as the basis of the socio-political aspects of internal migration and its influence on the political processes of the post-Soviet era, which created the foundations of the corruption of the modern Ukrainian political elite in order to identify such negatives on the way to fulfilling the requirements for Ukraine's membership in the EU and NATO.

Post-Soviet Ukraine partially implements general civilizational democratic norms: human rights, democracy, rule of law, tolerance and others, if concerned with migrants-foreigners. In the variant of the indigenous Ukrainian population, these rules do not act, because Ukrainians are not able to defend their rights and freedoms as foreigners. Institutions of Democratics in Post-Soviet Ukraine are still a phase of formation – it is a forced adaptation to post-Soviet realities of Ukrainian reality.

2.16. Administrative and legal regulation of information resources in the field of social protection of the population

The dynamic development of civil society and Ukraine's integration into the international arena have determined the relevance of the study and practical implementation of many legal concepts and legal phenomena. Among them, theoretical and legal issues of information resources in the field of social protection of the population occupy a special place.

The rapid development of information and communication technologies dramatically increases the social and legal significance and role of information, which turns into a driving force of social and state development. Information, which is the basis of any human activity in modern society, captures the experience of activity and turns into an information resource. Taking into account modern globalization processes, the role and importance of information resources is rapidly growing compared to the available material, natural, labor, energy and other resources of traditional use. Right now, in the conditions of the development and formation of the information society, relevant information resources are gaining a high economic value. The scientific study of the formation of Ukraine as a social state and the issue of ensuring social policy is quite broad in nature and is associated with the names of such scientists as M. Arovina, V. Babkin, O. Bermicheva, V. Bordeniuk, B. Ganvina, D. Yermolenko, S. Kyrychenko, O. Lavrienko, Yu. Loboda, L. Nalyvaiko, O. Pankevich, O. Petryshyn, V. Pohorilko, V. Sirenko, O. Skrypniuk, F. Shulzhenko, V. Shapoval and others. These scientists made a significant contribution to the study of issues of the social purpose of the state as a whole. Like all multidimensional complex phenomena, all modern state-legal phenomena are subject to a general regularity, in which their content in one way or another accumulates the past experience of state-legal formation. The legal regulation of information resources in the field of social protection of the population is no exception in this regard. Scholars such as G.O. Blinova, K.V. Dubych, O.O. Kochemirovska, I.H. Oxyom, H.P. Orel, O.M. Pishchulina and others. At the same time, not enough attention was paid to the systematic study of the system of information resources in the social sphere, the administrative and legal basis of their use, the content of the information circulating in them. First of all, it should be noted that the term "welfare state" can be considered both a theoretical and a practical concept based on the constitutional declaration of the welfare state. By declaring Ukraine a social state, the Constitution, as stated in the preamble (Constitution of Ukraine dated June 28, 1996), establishes a desired, not an actual, state. Therefore, today in Ukraine, only the legal prerequisites for the creation and further development of this concept have been created. All citizens of Ukraine, regardless of the region of residence, have the right to receive social services and administrative services of a social nature in Ukrainian state institutions. The tasks of the welfare state are manifested through the performance of such social functions as the guarantee, protection and

protection of socio-economic human rights, social protection and social equality. One of the goals of the welfare state is to guarantee certain living conditions to every person based on the equality of all forms of ownership of the means of production. The welfare state should also perform the function of overcoming social contradictions, taking into account and harmonizing the interests of different population groups and implementing solutions that are positively perceived by different social groups (Pilgun, 2011).

The essence of a modern social, democratic, legal state is that it is a means of achieving social consensus and harmony in socially heterogeneous societies. The essence of the state, in its functions, in the official role of the state in society, is characterized by its qualitative determination primarily in the provision and consistent realization of the interests of narrowly defined groups (including classes) or society as a whole. The social purpose of the state is to perform the following functions (Levytskyi, 2015).

The formation of a welfare state is impossible without the democratization of state administration and the development of civil society. At the same time, a necessary condition for the effective organization and implementation of state power is the coexistence of the state and society on a qualitatively new basis, which is the development of a legal social state and civil society. Civil society and the formation of a welfare state must go hand in hand. Man is at the center of all social and state processes, and every citizen must realize his importance and value as a member of society. In the conditions of civil society, pluralism of political, economic, social and spiritual social life is developing (Magnovsky, 2005). Undoubtedly, the creation of a social state is a complex and long-term process. In order to build a welfare state in Ukraine, it is necessary to implement in practice the requirements of its content, which requires the completion of legal, political, economic and social reforms. Among them are the rule of law, the protection and guarantee of the basic rights and freedoms of a person and a citizen, and the separation of powers. The implementation of a scientifically based social policy and the creation of an effective social protection management system is a necessary condition for the advancement of Ukraine to the EU and the development of a socially oriented economy (Telichko, 2018).

In the context of legal reform, since Ukraine seeks to integrate into a united Europe, it is important to adapt domestic legislation to the legislation of the European Union, develop a clear social policy of the state, etc.

The state of modern Ukrainian society and political phenomena in Ukraine objectively require the improvement of the constitutional regulation of social relations, that is, constitutional modernization. Therefore, updating the Constitution of Ukraine requires not only its improvement, but also "modernization" taking into account the constitutional transformations inherent in modern societies (Khaustova, 2013). The necessity and importance of amending the Constitution of Ukraine is explained primarily by the need for the political and institutional completion of statehood, separation from the legal heritage of the USSR, and the implementation of a modern political and legal vision of the state. In addition to improving legislation, an equally important condition for building a social state is improving the quality of legal practice, which, in turn, depends on the legal culture and professional culture of people who create and apply law.

The main tasks of the current political reforms are the completion of the constitutional reform aimed at establishing effective interaction of the highest bodies of state power in accordance with the principle of separation of powers; development and implementation of procedures for the formation and functioning of the parliamentary majority; establishment of effective interaction and mutual responsibility between the president, the parliament and the government in the formation and implementation of state policy; improvement of mechanisms and structuring, among other things, of the political system of society (Nalivayko, 2021). No less important for the formation of a social state in Ukraine is the raising of the level of legal culture and legal awareness of citizens, staff and society as a whole, the formation of respect for the law and the promotion of rights and freedoms, legal obligations and the ability to properly implement and fulfill them. A high level of legal culture and legal awareness is necessary for establishing legality and justice in society, creating an environment in which people can live freely and develop as individuals. Knowledge of the law, respect for the law, and the belief that the law is binding are prerequisites for the creation of a welfare state. Therefore, overcoming legal nihilism is another condition for creating a social state.

Despite certain obstacles and shortcomings in the activities of the social sphere, state and legal reforms open new perspectives in determining the humanistic orientation of social policy. In the conditions of significant economic, social and political transformations taking place in Ukraine today, it is necessary to pay attention to the state and legal aspects of social orientation. The creation of a welfare state is possible only on the basis of

the constitutional guarantee of all rights and freedoms of citizens, their material support and social protection.

The problem of creating new forms of relations in the social sphere has objective reasons: the development and globalization of the information society and the digital economy, the desire of the participants of social relations to achieve well-being, international standards and the European choice of Ukraine (Oksyom, 2019). The national model of the social service system does not meet European norms and standards in many respects. One of these parameters is insufficient legislative and regulatory regulation. Legal acts regulating the provision of social services in Ukraine are characterized by incorrect terminology and unclear definition of the functions, tasks and spheres of activity of the relevant institutions (Dubich, 2015).

Information resources are the basis of human knowledge, which are able to combine both the best experience of the development of the whole world and to predict the future direction of its movement. It is important to realize that the process of transforming individual knowledge into collective knowledge occurs with the help of information resources, which indicates their determining nature in state policy (Moroz, 2022). As a result, information products and services created on the basis of information resources have priority over other goods on the modern market.

The current state of development of the information society in our country indicates the need to make changes to the model of social development, particularly from the side of public administration institutions. Today, ensuring the transparency and openness of government institutions is one of the key components of the democratization of the public administration system in Ukraine.

Under such conditions, the state plays an active role in the process of transforming the existing system into an information society, where the organization of the information and communication system in the public sphere is entrusted to the state. The state must develop a unified politically and legally justified concept of the transition to the information society, specify the programs, plans and strategies necessary for this, as well as become a guarantor of the creation of general conditions for the development of information and communication technologies (Arkhypova, 2015). Implementation of the information society concept is a key principle of the information policy of the state, which strives to achieve European standards in the domestic environment.

The creation of an effective system of management of national information resources of Ukraine belongs to the key vectors of state policy and involves the solution of many problems that exist at this stage of the development of the national information society by state authorities.

Effective and transparent publication of information about the activities of state authorities and local self-government bodies in Ukraine is a powerful tool for establishing two-way communication between the state and civil society. In this context, one of the effective ways to increase the efficiency of the work of state authorities is to provide up-to-date information reports on their activities aimed at organizing fruitful cooperation between the authorities and citizens on matters of common interest (Nalivayko, 2019).

Information resources have significant potential and act as an active engine for the development of the current state at the beginning of the third millennium. A similar point of view is supported by other scientists (Melnyk, 2010; Dovgan, 2014).

Since information is one of the structural elements of social systems, information provision is of great importance for the realization of constitutional social rights. The most developed subject is the one in which the exchange of information is organized more intensively and in larger quantities. At the same time, information is the main factor of self-organization of all types of systems, which determines the development of evolutionary processes, the structure and stability of emerging social systems, and requires the construction of systems of intensive exchange with social structures based on the principle of information openness (Orel, 2021). At the current stage of society's development, digital technologies are an integral element of successful reform and functioning of any sphere.

The state is the regulator of social relations and the guarantor of the constitutional rights of all parties. The role of the state in social relations is expressed through its functions, the implementation of which is determined by the historical, political and economic conditions of the state's development. A set of interconnected regulatory mechanisms constitutes a system of state regulation, the effectiveness of which is determined by the state policy on the development of the social sphere.

The system of state regulation of the social sphere includes the creation of a legal framework and mechanisms of law enforcement by administrative bodies. The ultimate goal of state regulation is to ensure the social security of citizens, which is an indicator of the civility and social

orientation of the state and is considered as a tool of social stability (Oksyom, 2019).

Improvement of social protection of citizens and public administration in this area are defined as priority areas of state and international policy in several strategic documents. Thus, by ratifying the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states, on the other hand, Ukraine undertook international cooperation obligations to ensure decent work, employment policy, safe and healthy working conditions, social dialogue, social protection, social inclusion, gender equality and non-discrimination (Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states dated 16.09.2014). In order to fulfill international obligations, in the Decree of the President of Ukraine "On the Sustainable Development Strategy "Ukraine - 2020", one of the 62 reforms and development programs of the state provided for the reform of the social protection system (On the Sustainable Development Strategy "Ukraine - 2020" dated January 15, 2015 .). The concept of implementation of the state policy on social protection of the population and protection of children's rights, developed in the context of the reform of the social protection system, provides for the creation of the National Social Service Service of Ukraine (Some issues of the National Social Service Service of Ukraine dated 26.08.2020) and its administration of the processes of providing social support, monitoring and evaluation of their quality, provision of services using the latest information and analytical systems (On the approval of the Concept of implementation of state policy on social protection of the population and protection of children's rights dated August 26, 2020).

Taking into account the general trend of digitization of public administration in Ukraine, the Strategy of Digital Transformation of the Social Sphere was adopted, which defines the directions and tasks of the comprehensive digital transformation of all components of the social protection system of the population based on unified approaches, standards and technologies (On the approval of the Strategy of Digital Transformation of the Social Sphere dated October 28 2020).

On the other hand, the Strategy for Digital Transformation of the Social Sector defines social protection as a system of economic, social and organizational measures implemented by the state to support the most vulnerable segments of the population. Social protection includes all social

payments, benefits, services and measures provided by legislation for citizens, which are provided by social protection authorities at the expense of state and local budgets, the pension fund of Ukraine, mandatory state social insurance funds, international technical assistance and other sources funding not prohibited by law (On the approval of the Regulation on the Unified Information System of the Social Sphere dated April 14, 2021). According to the current legislation, the main subjects of social protection and social support of citizens are social protection institutions (About the approval of the Strategy of digital transformation of the social sphere dated October 28, 2020). The current legislation provides that the administration of the processes of providing social support, monitoring and evaluation of their quality, and the provision of services will be carried out using the latest information and analytical systems (On the approval of the Concept of the implementation of state policy on social protection of the population and protection of children's rights dated August 26, 2020).

The main legislative acts that regulate information interaction in the social sphere are: the Constitution of Ukraine, the Civil Code of Ukraine, the Tax Code of Ukraine, laws of Ukraine: "On Information", "On Electronic Documents and Electronic Document Management", "On Protection of Information in Information and Communication Systems ", "On state secrets", "On access to public information", "On personal data protection", "On administrative services", "On e-commerce" (Oksyom, 2019). Considering the normative-legal regulation of the functioning of information resources in the field of social protection of the population, it is necessary to supplement the specified list with such normative-legal acts as: Laws of Ukraine "On electronic digital signature", "On electronic communications", "On social services", "On employment of the population" , "On verification and monitoring of state payments" and others.

Systematizing influence on information legal relations in the social sphere is carried out by Resolutions of the Cabinet of Ministers of Ukraine dated April 14, 2021 No. 404 "On approval of the Regulation on the Unified Information System of the Social Sphere" and dated November 11, 2020 No. 1278 "On the introduction of an experimental project on the introduction of the first stage of the Unified Information System of the Social Sphere", Decree of the Cabinet of Ministers of Ukraine dated August 26, 2020 No. 1057-r "On the Approval of the Concept of Implementation of State Policy Regarding Social Protection of the Population and Protection of Children's Rights" and dated October 28, 2020 No. 1353-r. "On the

approval of the Strategy of digital transformation of the social sphere" (Chalyk, 2022).

Historically, the emergence of the concept of information resources is directly related to the growth of dependence on the degree of development and efficiency of the use of information processing and transmission methods. At the same time, the information resource acts as an element of the information infrastructure, which combines data, a means of their preservation, the relationship between information components, information about the processes of receipt, processing and transmission of information, etc.

It should be noted that in the modern conditions of technological progress, problems related to the definition of ownership, possession and disposal of information resources, establishment of access rights and restrictions, definition of requirements for information resources as a separate type of product are becoming a priority. In addition, relevant information resources in the state have recently acquired the status of national (Nalivaiko, 2022). We are talking, first of all, about information resources that contain information about the activities of public administration bodies, as well as about various aspects of the activities of legal entities and citizens, whose activities meet the specified requirements for the structure and maintenance, which must undergo the appropriate registration procedure. For example, the sphere of scientific and technical information is the most developed sphere of national resources in the country. In addition, for our country in the modern conditions of its development, the formation of a national information resource management system is a strategic direction that requires representatives of the public administration to solve current problems from a single methodologically balanced and scientifically grounded position (Ablyakimov, 2010).

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Thus, in the process of building Ukraine as a social state, it is important to bring the national legal system closer to internationally recognized standards in the field of human and citizen rights and the principles of the functioning of state power. The idea of building Ukraine as a social and legal state should become the goal not only of politicians and statesmen, but also of the whole society.

Reforming and improving administrative and legislative regulation in the field of social protection is one of the key factors in the development of Ukraine as a welfare state. At the same time, the harmonization of state policy in the field of social protection with international legal standards, in particular European ones, is an important prerequisite for the successful European integration of Ukraine. The law must define the concept and content of state social policy, the main functions of legislative and executive authorities and local self-government bodies in this area, as well as their role and level of responsibility in all areas of social policy, including social protection.

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Chapter 3
COHESION IN WARTIME CONDITIONS AS A COMPONENT OF NATIONAL POLICY

3.1. Impact of full-scale war on changes in the format of Ukraine's cooperation with the European Union

The relevance of the research is determined by the current deep transformation of economic cooperation between Ukraine and the EU under the influence of a full-scale Russian invasion of Ukraine in 2022 and the need to study the prospects for cooperation between Ukraine and the EU in the future, the main ways of EU aid and the plan for the reconstruction of Ukraine in the post-war period.

The purpose of the research is to identify transformational changes in the economic cooperation of Ukraine with the EU under the influence of the full-scale war in Ukraine and to determine the directions and prospects of such cooperation in the post-war period.

Since 2014, Ukraine has actively moved towards European integration by signing the Association Agreement with the European Union. Over the past eight years, Ukraine has implemented several European integration reforms and has come much closer to the EU acquis, despite the state of war Ukraine has been in all this time, which has weakened the state's ability to implement reforms.

According to the EU, the most important reform in Ukraine is the reform of the legal system. The most important are the fight against corruption and economic reforms. The legal basis for cooperation between Ukraine and the EU in the field of science and research is the Association Agreement between Ukraine on the one hand and the European Union, the European Atomic Energy Community and their member states on the other, the Agreement between Ukraine and the European Community on scientific and technical cooperation and a number of bilateral agreements.

As of January 1, 2014, the EU allocated 80,000 million euros for the development of science over the next 7 years. Ukrainians can get money for research, but first they need to learn how to find partners among the program participants. Ukraine should be part of the European Research Area. Within the framework of the agreement, conditions for comfortable work at home will be

created for scientists, as well as joint developments of Ukraine and the EU in the space industry.

The Joint Committee on Scientific and Technical Cooperation between Ukraine and the EU is responsible for monitoring the implementation of the Agreement and coordinating the next steps aimed at strengthening cooperation in this area.

Since 2014, Ukrainian institutions and organizations have submitted a total of more than 2,500 project proposals to EU tenders. According to the results of these competitions, Ukrainian participants received 220 scholarships for a total amount of almost 44 million euros. Since 2016, Ukraine has been an associate member of the Research and Training Program of the European Atomic Energy Community (EURATOM). The agreement, in particular, provides for the possibility of supporting research and cooperation in the field of nuclear fission and fusion, as well as cooperation with the Joint Research Center of the EC in the field of nuclear research. In 2018, the EU allocated 150,000 euros for the development of the relevant Ukrainian National Contact Point (UAinEURATOM). This project will contribute to the participation of Ukrainian researchers in EURATOM programs, strengthening their cooperation with European colleagues and popularizing both EURATOM in Ukraine and national scientific research in the EU.

In general, Ukraine's participation in the scientific and educational program is a good example of successful cooperation with the EU in the scientific field. According to rough calculations, we receive three times more grants than contributions. The estimated total volume of financing of Ukrainian institutions under EU programs already amounts to more than 4,7 million euros.

The participation of Ukrainian scientific institutions in European nuclear projects contributes to the implementation by our country of EU nuclear safety standards and relevant best practices.

Within the framework of the implementation of the provisions of the Association Agreement on the expansion of cooperation between Ukraine and the European Union in the space sphere, special attention is paid to active interaction with the European Commission, the European Space Agency (ESA), space organizations, the involvement of EU member states and Ukraine in the GALILEO-EGNOS programs (European Global Navigation Satellite System), COPERNICUS (Global Observation in the Interests of Security and Environmental Protection) and creating conditions for the development of Ukraine, which has the prospect of becoming a member of the European Space Agency in the future.

In 2018, an agreement was signed between DCAU and the European Commission on cooperation in data collection and use of Sentinel satellites as part of the European "Copernicus" program, which gives us access to European space data. These images can be used to monitor Ukraine's economy, agriculture, ecology, and emergency preparedness (Scientific cooperation between Ukraine and the EU).

EU aid should be understood in a broader sense than direct financial aid. Thanks to the implementation of a highly intensive political dialogue, national companies got the opportunity to participate in various EU programs aimed at the development of entrepreneurship and the promotion of innovative development.

A separate area of cooperation between Ukraine and the EU has become technical and financial assistance and, especially, macro-financial assistance (Fig. 3.1).

Horizon-2020	• The largest program of the European Union aimed at financing research and innovative development.
COSME	• One of the key programs of the European Union with a budget of 2,3 billion euros, aimed at creating favorable conditions for the development of small and medium-sized businesses.
Creative Europe	• It is aimed at supporting the cultural and creative sectors of Europe.

Figure 3.1 – EU programs, technical, financial and macro-financial assistance of the EU

Source: compiled by the authors based on data (EU assistance)

According to the results of 2020, the EU remains the largest trading partner of Ukraine with a share of 40,7% (40,1% in 2019). According to the State Statistics Service of Ukraine, the volume of trade in goods and services with the EU decreased by 9% compared to 2019 and amounted to 48,1 billion dollars. USA. During this period, the volume of exports of goods and services to the EU decreased by 9,4% and amounted to 21,9 billion US dollars. Import of goods and services from the EU decreased by 8,7% and amounted to 26,3 billion dollars USA. According to the results of 2020, the balance of trade with the EU remained negative for Ukraine, but decreased to – 4,4 billion US dollars (the balance in 2019 was – 4,6 billion US dollars).

The volume of trade between Ukraine and the EU in 2020 amounted to 42,1 billion US dollars, which is 8,1% less than in 2019. At the same time, the export of goods to EU countries decreased by 10,3% and amounted to 18,6%.

billion dollars USA. Imports of goods decreased by 6,2% to 23,5 billion dollars USA.

The volume of trade in services between Ukraine and the EU in 2020 amounted to 7,1 billion US dollars, which is 14% less than in 2019. Export of services to the EU decreased by 4,8% and amounted to 4,3 billion dollars USA. Import of services from the EU decreased by 25% and amounted to USD 2,8 billion USA.

The free trade zone between Ukraine and the EU plays a central role in this area of cooperation. The benefit of the FTA for Ukraine is that Ukraine will get even better access to the large EU market and to the markets of third countries, lower import duty rates for Ukrainian goods, access to public procurement in EU countries, lower prices and a higher standard of living (Ukraine and the European union: basics of cooperation).

Ukraine and the European Union discussed priorities for revitalizing business, promoting entrepreneurship and strengthening cooperation in the field of tourism in wartime conditions.

Ukraine confirmed its readiness to continue work within the framework of the updated partnership plan for 2023-2024 of the Memorandum on strategic partnership in the raw materials sector.

According to the agreement between Ukraine and the EU, the meeting of the subcommittee on issues of economic and other sectoral cooperation takes place according to the cluster principle with an emphasis on key issues that are planned to be discussed by the subcommittee (Stimulation of entrepreneurial activity).

The large volume of Ukrainian export to the EU (in 2022, the total value was 24,1 billion euros) and the logistical problems associated with the attack prompted Ukraine and the EU to look for ways to further regulate the movement of goods. Among them, it is worth highlighting the liberalization of road transport, which was agreed in June 2022 (How a full-scale war changed…).

Ukraine attaches great importance to the development of cooperation with the EU, considering the possibilities of promoting the national tourist product on the European market, participation in the information space, the best experience of organizing tourist activities in our country. After all, according to its tourist and recreational potential, Ukraine has every opportunity to become one of the leading tourist centers in Europe.

Specific and systematic activities related to the development of international tourist relations in Ukraine are an effective mechanism for creating a favorable environment for the development of tourism, the

integration of Ukraine into the European community, the effective use of tourist resources, the development of a cross-border infrastructure network, and the development of the national economy and culture.

Specific and systematic activities related to the development of international tourist affairs in Ukraine are an effective mechanism for creating a favorable environment for the development of tourism, the integration of Ukraine into the European community, the effective use of tourist resources, the development of a cross-border infrastructure network, and the development of the national economy and culture.

The State Service of Tourism and Resorts undertakes to ensure the right of citizens of Ukraine to free movement and freedom of movement, free access to tourist products of foreign countries in accordance with UN and WTO documents, in particular in the Universal Declaration of Human Rights, the Charter of Tourism, the decision of the Hague Conference and the Global Code of Ethics tourism. After all, as is known, the practice of organizing tourist trips of Ukrainian tourists abroad is still far from perfection.

An important obstacle to the development of international institutional cooperation on the part of the National Service of Tourism and Resorts remains insufficient budgetary funding for this type of activity. The effective development of international business directly depends on the state organizational, methodical, financial and economic support of tourism. Tourism is a highly profitable branch of the economy, which brings several billion dollars to state budgets and is an important factor in increasing the international authority of the state, and should receive annual revenue deductions from the budgets of all levels of tourist enterprises and personal accounts of tourists. The experience of countries where tourism has gained significant development shows that without state investments, the development of tourism is impossible, and investments are not expenses, but contribution in a field that brings high and quick profits (Law of the European Union).

As for today, cooperation between Ukraine and the UAE is the most successful in the field of trade in agricultural products. The potential of this and other directions is quite significant. The conclusion of the Comprehensive Economic Partnership Agreement (CEPA) between Ukraine and the United Arab Emirates, which began at the end of last year, can be a powerful driver for strengthening economic cooperation.

Undoubtedly, the forms of cooperation between Ukraine and the EU in wartime are largely determined by Ukraine's needs.

Therefore, joint arms purchases made through the Peace Support Institute will allow EU member states to coordinate their efforts to meet the

needs of the Armed Forces of Ukraine on the battlefield. A combination of measures aimed at removing customs duties on Ukrainian products, increasing the capacity of transport corridors between Ukraine and the EU, and liberalizing traffic should help us financially.

At the same time, “roads of solidarity” for Ukrainian products are also a measure of economic security, as they make Ukrainian exports at least partially independent of sea transportation and the “grain initiative”.

In addition to the needs of the Ukrainian side, the European Union's support initiatives, their content and speed of implementation directly reflect the structure and dynamics of European integration processes. Difficult political discussions arise after decisions on foreign policy and security policy, the adoption of which requires the consent of all member states.

A vivid example is the process during which was decided to grant Ukraine the status of a candidate for EU accession, which was reported in the media at various stages about fears and skepticism on the part of some countries, such as the Netherlands and Denmark. The process of concluding the sanctions agreement was also difficult, especially the disconnection of some banks of the aggressor country from SWIFT.

However, initiatives that can be taken by the EU institutions on their own have been adopted very quickly and their scale shows that all or almost all general directorates of the European Commission are involved and that coordination between them has been successful. Not the last role in this coordination is played by the Support Group for Ukraine in the European Commission, which is a connecting link between various EU structures that cooperate with Ukraine.

The European Union’s wartime assistance initiatives are largely based on the forms and mechanisms of cooperation that existed before a large-scale war. Traditionally, forms of cooperation between Ukraine and the EU before the attack can be divided into three categories:

political dialogue at different levels;

interaction regarding the implementation of the Association Agreement, both formal within the framework of the association's institutes, and the development of informal professional networks;

EU aid projects, especially for financing fundamental political reforms: decentralization, public administration, courts and the law enforcement system.

In addition, even before the attack, two delegations of the European Union were active in Ukraine dealing with security issues: the EU Advisory Mission in Ukraine (EUAM) and the EU Advisory Delegation of the EU in Moldova and Ukraine.

With the onset of full-scale war, many of these projects were aimed at meeting wartime needs. For example, the U-LEAD project on decentralization and regional development has begun to collect information on the humanitarian needs of local communities and to distribute appropriate aid to them from the EU and member states. The mandate of the CSSE was completed so that the operation could support Ukrainian experts in the investigation of war crimes in the Russian Federation.

The Association Agreement between Ukraine and the EU is undergoing a similar transition from "peacetime European integration" to wartime support.

As is known, the agreement contains ambitious plans for the liberalization of trade in goods and services and in the field of public procurement. In April 2014, at the height of the war in eastern Ukraine and three years before the agreement came into force, the European Commission had already decided to temporarily refuse or completely cancel tariffs on Ukrainian exports. The annual economy of Ukrainian exporters then amounted to about 500 million euros. In 2022, the EU used a similar instrument, but in addition to the FTAA trade liberalization rules and regulations.

One of the most relevant questions at the moment: does the status of Ukraine as a candidate country in June 2022 require changes to the association agreement or the conclusion of a new agreement? The short answer is no. The condition of the candidate is more of a political superstructure, which theoretically can include an agreement from the very beginning, and infrastructure will become a major component of Ukraine-EU relations in the near future.

Candidate status is certainly a key political lever with which the European Union can influence Ukraine's fulfillment of its obligations under the Agreement and within the framework of membership negotiations.

The cost of rebuilding destroyed infrastructure facilities can become no fewer financial levers, in particular in the context of the EU Green Course (EU Green Course). The main idea of the EWC is to transform Europe into a climate-neutral continent by 2050.

Thus, a successful Ukrainian reconstruction project – which, according to EU leaders, could take up to 10 years – is both an important financial influence of the EU on Ukraine, and an initiative that requires the synergy of all existing formats and sectors.

Without the implementation of the Association Agreement, in particular in the field of environmental protection, it is difficult to talk about climate-neutral reconstruction and green energy. At the same time, private funds are likely to be attracted after reconstruction, and the institutional climate and the

progress of the parties in membership negotiations will play a significant role, although investors see this as a sign of predictability and stability.

It should be noted that the speed and success of reconstruction will be affected by the preservation and expansion of cooperation formats that were created during the war. In particular, automobile "roads of solidarity" have significant potential, as well as greater use of rail and river transport.

Therefore, as in wartime, post-war Ukraine-EU cooperation is characterized by the synergy of old and new formats, networks and structures, where the Association Agreement plays a major role.

In the modern world, the ideas of integration have gained considerable popularity. The main representative of such ideas in Europe today is the European Union, whose leading position among the world's most important integration entities can be considered indisputable. On the basis of the Treaty of Rome on the establishment of the European Economic Community, the implementation of the slogan of the unification of Europe, the history of which dates back several hundred years, has already begun. Since then, the European Community has become a vivid example of the combination of increasing the level of security and simultaneously increasing the standard of living of society.

The European Union is currently the main mechanism for uniting the interests of the majority of Europe in the pursuit of security and prosperity, so Ukraine's choice to integrate with Europe is obvious. From March 2021 to February 2022, 8 EU countries signed a declaration of support for Ukraine's European perspective. On February 28, 2022, the President of Ukraine Volodymyr Zelenskyi, after negotiations with the President of the European Commission, Ursula von der Leyen, signed the application for Ukraine's membership in the EU.

The Association Agreement provides for the creation of a legal, economic and organizational basis for the free movement of goods, services, capital and private labor between Ukraine and the EU. In the future, the very large and diversified market of the European Union, the removal of barriers to foreign trade, the harmonization of regulatory systems and the improvement of market institutions can become powerful engines of the growth of the Ukrainian economy.

Currently, the most important forms of cooperation between Ukraine and the EU are technical assistance, trade and investment activities. EC is actually the largest international donor for Ukraine.

The EU undertakes to strongly support Ukraine's efforts to create a business-friendly environment and to implement socio-economic reforms. To

support real economic reforms in Ukraine, the EU has already granted Ukraine the status of a market economy within the framework of initiating and conducting EU anti-dumping investigations.

In the field of European foreign policy and political security, the EU strategy offers many new elements in comparison with the UPS, emphasizing the interest in preserving and strengthening the stabilization of Ukraine's role in the region, i.e. creating opportunities for organizing meetings of the EU with the participation of Ukraine in the Expert Group on Dialogue on Disarmament, non-proliferation and export of conventional weapons; to cooperate in the development of joint international political initiatives regarding the prevention of conflicts and actions in crisis situations in countries and regions bordering Ukraine. Positive violations are evident in the sphere of justice and internal affairs. It is about improving the visa policy between Ukraine and the EU, starting a regular dialogue between Ukrainian and European judicial authorities, cooperation between Europol and Ukrainian law enforcement agencies; modernization of border points in Ukraine and western neighboring countries; creating an informal network and for improving the exchange and analysis of information.

In the field of humanitarian cooperation, the EU undertakes to support Ukraine's efforts to fulfill its international obligations (for example, standards and requirements of the Council of Europe); to establish relations between EU member states and OM representatives in Ukraine; participate in the development of free mass media (through cooperation between journalists and their organizations); scientific research, exchange of students and youth; support a program of partnerships between national, regional and local organizations and other institutions. The joint energy and environmental strategy of the EU does not go beyond the previously announced EU initiatives, except that the EU undertakes to support efforts in the environmental field aimed at mitigating the consequences of the adverse environmental situation in Ukraine for the health of people and the population; to reform municipal units responsible for environmental protection services; raising environmental awareness in Ukraine at the "Environment for Europe" conference in Kyiv. The closure of the Chornobyl NPP was an important event that has already implemented EU initiatives in this area to a certain extent.

So, summarizing all of the above, it should be recognized that a realistic understanding of establishing relations with the EU is important for Ukraine, based on the fact that in the short- and medium-term perspective, relations between Ukraine and the EU are a priority.

During cooperation with the involvement of resources from donor countries, the European Union became a reliable partner, offering the Ukrainian government and civil society support for a number of reforms of the socio-economic development of Ukraine and the European Union (Cooperation between Ukraine and the EU).

Currently, priority areas of cooperation between Ukraine and the EU are economic development and trade, public administration and civil society, energy and energy efficiency, infrastructure and social services, transport and infrastructure, agriculture, banking and finance, national security and defense, communication and ICT, reconstruction of Donbas and rehabilitation of displaced persons, health care and nuclear safety.

3.2. Impact of Russian full-scale invasion into Ukraine on international food security

Russia's full-scale invasion on Ukrainian territory on February 24, 2022, shook not only Ukrainian society, but also the international community. The driving force of the military actions affected all aspects of the modern stable economic, social, environment of Ukrainians, as well as the national security of Ukraine, which includes food security.

In the context of international society, Russia's military aggression brought with it not only a large flow of resettlement of Ukrainian migrants to the countries of Europe, South and North America, and some Asian countries, but also exacerbated already the existing problem of international food security.

As you know, according to UN forecasts, by 2080 the global population should reach more than 8 billion people (United Nations Department of Economic and Social Affairs, 2022).

As of November 2022, the world's population has reached 8.0 billion, which is more than the number recorded in the 1950s. Since 1950, the world's population has doubled to over 5 billion in 37 years, compared to the number of inhabitants recorded in 1987. According to UN forecasts, in 2059 the number of people living on Earth will exceed 10 billion.

Over the one hundred years from 1950 to 2050, the world population was growing the fastest in the period 1962-1965, when it was increasing on average by 2.1 per cent per year (Fig. 3.2). Since then, the pace of population growth has slowed by more than half owing to reduced levels of fertility. In 2020, and for the first time since 1950, the rate of population

growth fell below 1 per cent per year and it is projected to continue to slow in the next few decades and through the end of this century. The global population could grow to around 8.5 billion in 2030, and add 1.18 billion in the following two decades, reaching 9.7 billion in 2050 (United Nations Department of Economic and Social Affairs, 2022).

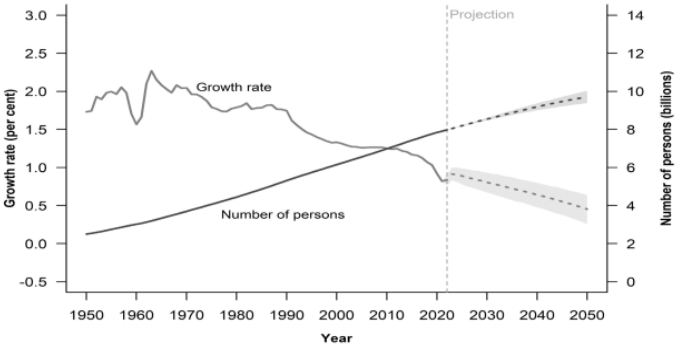

Figure 3.2 – Global population size and annual growth rate: estimates, 1950-2022, and medium scenario with 95 percent prediction intervals, 2022-2050
Source: according to the UNDESA

The food problem has not lost its relevance over the years. According to the statistics of the US Department of Agriculture (FAOSTAT, 2022) in 2021-2022, Ukraine ranked seventh in the world for wheat production – 33 million tons. In the first place in the EU, if we take into account the total production of wheat in all the member states of the European Union.

According to the Center for Monitoring Economic Data, the largest importers of Ukrainian wheat in 2020 were Egypt ($5.2 billion), China ($3.47 billion), Turkey ($2.44 billion), Nigeria ($2.15 billion dollars) and Indonesia ($2.08 billion). The largest buyer of wheat from Ukraine was Egypt (OEC, 2022). According to the report of the Global Index of Food Security, part 5, in November 2021, Ukraine ranked 58th among 113 countries. As of September 2022, it ranks 73rd in the Index. Despite Ukraine's adequate food supply, the availability score has declined due to a weak infrastructural supply chain, armed conflict, corruption and political instability. Figure 3.3 shows the relationship between the indicators and the

ranking of the Global Food Security Index (Country report: Ukraine. Global Food Security Index 2022).

Figure 3.3 – Correlation between the indicators and the rating of the Global Food Security Index for Ukraine
Source: according to the Global Food Security Index

From the beginning, let's consider the historical facts regarding the formation of food security as a whole concept.

As defined by FAO, the food security of the state is a well-functioning system that provides all strata of the population with food products according to accepted physiological norms due to its own production and the necessary level of import of those products for the production of which there are no internal conditions (Rome Declaration on World Food Security and Plan of Action of the World Food Summit, 1996).

Methodological concept «food security» is derived by scientists from the concept of «economic security» (Rumyk I.I., 2020). According to the Order of the Ministry of Economic Development and Trade of Ukraine «On the approval of methodological recommendations regarding the calculation of the level of economic security of Ukraine» № 1277 from 29.10.2013, economic security is the state of food production in the country, which is able to fully satisfy the needs of every member of society in food of appropriate quality, provided that it is balanced and accessible to every member of society (Rumyk I.I., 2014). It should be noted that in the scientific literature and legal acts, there is still no single definition for food security. Accordingly, in Table 3.1, various scientific reflections on the term «food security» were collected. Based on the presented theoretical material, it is possible to generalize the concept of «food security» as the economic ability and obligation of the state to provide the population with high-quality food products, in the necessary quantity and self-sufficiency in food, under any external or internal conditions. In connection with the full-scale invasion of Russia on the territory of Ukraine, all sea ports of Ukraine were blocked. Also, it should be noted that since 2014, the ports of the Crimean Peninsula have been under occupation.

Table 3.1 – Definition of the concept of «food safety» in scientific sources

№	The authors	Definition of the term
1	T. Maltus	The beginning of the study of the problem of food security in economic theory, the author indicated the need to provide mankind with food as the main means of its existence (Malthus, 1998)
2	J. Conway, E. Barber	Ensuring guaranteed access of all residents and at any time to food in the amount necessary for an active, healthy life (Conway, 1990).
3	V. Geets	A complex concept that includes two aspects related to the purely economic process of "food security" and its importance as a necessary condition for maintaining national security in its external and internal manifestations (Geets, 1999).
4	V. Shlemko, I. Binko	This is the level of food security of the population, which guarantees the social and political stability of society, the survival and development of the nation, the family, the individual, and sustainable economic development (Shlemko, 1997).
5	O. Hoychuk S. Kvasha	The guaranteed ability of the state to satisfy the needs of the population in the person of each citizen with food products in the necessary volume, assortment and quality at a level that ensures the health and intellectual development of the person, based on the principles of self-sufficiency in basic basic products and their economic and physical availability, regardless of the influence of external and internal factors (Golikova, 2012).
6	O. Shebanin	The state's ability to provide a sufficient amount of food to maintain a healthy lifestyle for all strata of the population, regardless of their income (Golikova, 2012).
7	V. Zakharchenko, O. Borisov, E. Molina	Providing the country's population with food at the expense of internal resources, i.e. achieving such a potential of agricultural production (labor force, seeds, cultivated area, etc.) that, in a critical situation, it is possible to increase the production of food products (Zakharchenko, 2005)
8	M. Krupko, I. Mykhasyuk, A. Melnyk	Food security is characterized as the state's ability to guarantee the food needs of the country's population under both normal and emergency conditions (Mykhasyu, 1999).
9	M. Khorunzhy	The state's ability under any circumstances to guarantee and provide the population's food needs at the level of scientifically based consumption norms and in accordance with its solvency and at the prices prevailing on the food market (Khorunzhy, 2002).
10	N. Basyurkina	According to the author, food safety is divided into important aspects: - quantitative: the degree of realization of the current need for agricultural products. - high-quality: satisfying the need for healthy, high-quality agricultural products. - socio-economic: the growth of incomes of the population, which ensures access of all population groups to food at the level of subsistence (Basyurkina N.Y., 2011).

Source: formed by the author

The export of agricultural products from February 24, 2022 to July 22, 2022 took place with the help of railway transport, internal water transport (Danube ports) and road transport through the checkpoints of the western border. However, this method of exporting agricultural products was not able to cover the necessary amount of wheat to overcome the crisis situation, which brought the countries dependent on Ukrainian exports closer to starvation, and the global market to the increase in food prices.

In order to solve the global problem of food security, on July 22, 2022, at the suggestion of the United Nations, the initiative «On the safe transportation of grain and food products from Ukrainian ports» was signed between Ukraine, Turkey and the UN Secretary General, that allowed the export of agricultural products from three deep sea ports of Great Odesa. Seaports «Odesa», «Chornomorsk» and «Pivdenny» regulate their activities with the help of demilitarized humanitarian corridors, in the form of a caravan with a leadership vessel. During the Grain Initiative, 29 million tons of agricultural products were exported through three deep-sea ports of Ukraine (as of the month of May), which slowed the onset of the world food crisis. It should be noted that the agreement was extended for another 120 days, starting from March 18, 2023. This is the second time since the beginning of the full-scale invasion that the «grain agreement» has been extended.

Figure 3.4 shows the «grain initiative» path.

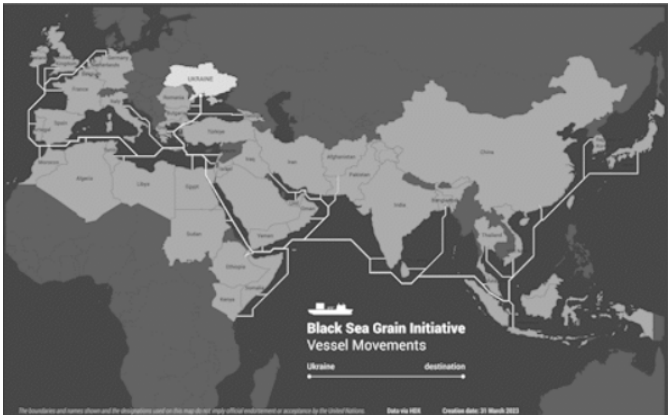

Figure 3.4 – The way of «grain initiative»
Source: according to the United Nations: Black Sea Grain Initiative Joint Coordination Centre

From this figure, we can see that international food security directly depends on Ukrainian food. After all, with the beginning of the war and the blockade of grain in Ukrainian ports, prices on the world market of food products increased sharply.

With the help of the database on the exchange of humanitarian indicators (Black Sea Grain Initiative Vessel Movements, 2022), raw data was generated for the analysis of the unloading of agricultural crops from the ports of Great Odesa (date of departure of the ship, name of the ship, the country to which the ship is headed, what type of cargo, tonnage, etc.).

A total of 921 ships left Ukrainian ports. Table 3.2 shows the dynamics of ships leaving the ports of Greater Odessa (monthly).

Table 3.2 – The dynamics of the departure of vessels from the ports of Greater Odessa

№ з/п	Number of vessels, pcs.	The name of the port		
		Odesa	Chornomorsk	Pivdenny
1	August, 2022	17	34	12
2	September, 2022	58	77	44
3	October, 2022	51	76	52
4	November, 2022	17	23	19
5	December, 2022	36	39	29
6	January, 2023	25	26	26
7	February, 2023	27	28	28
8	March, 2023	31	27	29
9	April, 2023	18	21	19
TOTAL		280	317	258

Source: generated by the author based on data from the Black Sea Grain Initiative Vessel Movements

The throughput capacity of the « Pivdenny» port is the largest among all the studied ports of Greater Odessa. The busiest months are September (179 vessels in total) and October (also 179 vessels in total).

Figure 3.5 shows the amount of grain shipped under the «Grain Initiative» compared to last year.

We see that in mid-October there is a gap between the grain shipped in 2021 and 2022, almost approached the same indicators, but already in the 43rd week of 2021, the amount of exported grain increased significantly, while the indicators of 2022 remained at the same level.

Also, in the 46th week, a sharp decline in the export of grain crops is observed. This fact is connected with the fact that in this period of time, the

Russian Federation began to interfere with the actions of expert groups inspecting cargo on ships.

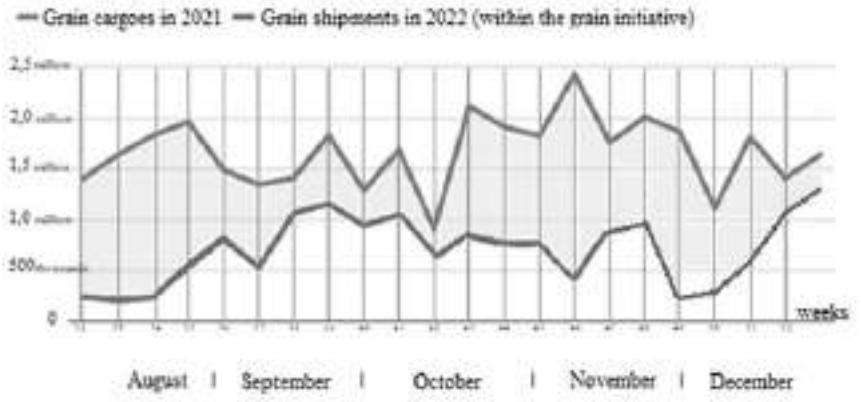

Figure 3.5 – Number of shipped grain cargoes
Source: generated by the author based on data from the Black Sea Grain Initiative Vessel Movements

Also, the Russian Federation threatened to withdraw from the «Grain Initiative» prematurely, thus the government of this country endangered the unloading of agricultural crops from the seaports of Great Odesa.

Since the beginning of December, there has been a tendency to decrease the unloading of sea ports, both in 2021 and in 2022. But by the beginning of 2023, the trend of shipment of agricultural products changes in the opposite direction and starts to grow.

Figure 3.6 shows sum of tonnage by departure port.

From Figure 3.6 we can see that 28% (8 million tons) of agricultural products were exported from the port of «Odessa», 35.8% (10.3 million tons) from the port of «Pivdenny», and from the port of «Chornomorsk » – 36.2% (10.4 million tons).

That is, a larger number of ships left the «Southern» port, but the largest cargo capacity was recorded in the «Chornomorsk» port.

The total amount of agricultural crops exported from Ukrainian seaports with the participation of the «Grain Initiative» is presented in Figure 3.7.

Next, we will analyze the export of agricultural crops from the seaports of Great Odesa (Figure 3.8).

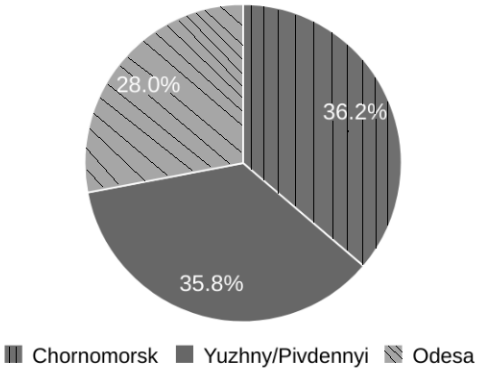

Figure 3.6 – Sum of Tonnage by Departure port
Source: generated by the author based on data from the Black Sea Grain Initiative Vessel Movements

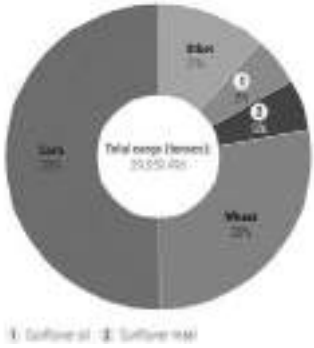

Figure 3.7 – The total number of agricultural crops exported from Ukrainian seaports (%)
Source: according to the Black Sea Grain Initiative Vessel Movements

Analyzing the export of agricultural crops from the ports of Ukraine, an active trend in the export of corn is clearly visible. Among all ports, it is this agricultural crop that is the leader in unloaded goods («Odesa» port – 3.780 million tons; «Pivdenny» port – 5.614 million tons; «Chornomorsk» port – 5.065 million tons).

Next comes wheat. Port «Odesa» – 2.743 million tons; «Pivdenny» port – 2.353 million tons; «Chornomorsk» port – 2.574 million tons.

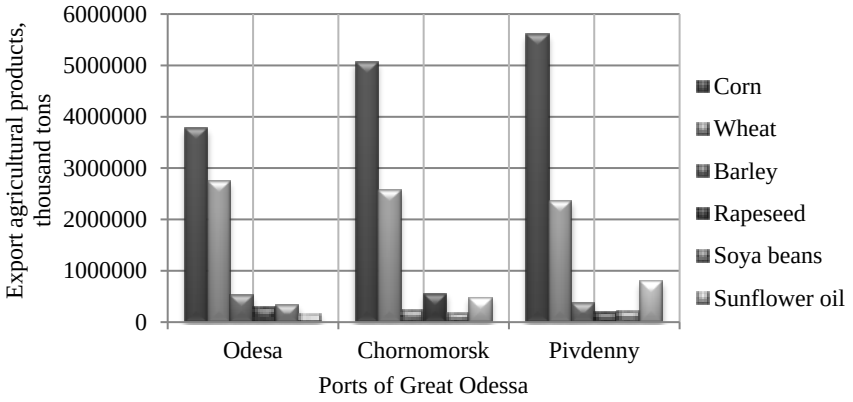

Figure 3.8 – Export agricultural products from Great Odesa ports
Source: generated by the author based on data from the Black Sea Grain Initiative Vessel Movements

Next, consider the total amount of corn, wheat, soybeans, rapeseed, sunflower oil, and barley exported by the three ports (Fig. 3.9).

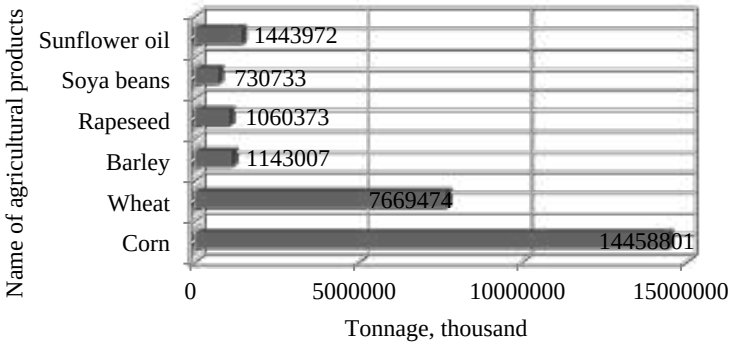

Figure 3.9 – Total export agricultural products
Source: generated by the author based on data from the Black Sea Grain Initiative Vessel Movements

So, we can see that corn (14.6 million), wheat (7.67 million), rapeseed (1.06 million), barley (1.14 million), sunflower oil (1.44 million) and soya beans (730.7 thousand).

We will remind that Ukraine is one of the main suppliers of corn, wheat and barley. These types of agricultural crops account for 10-13% of the world market, and sunflower oil accounts for as much as 50% of the entire market.

The next stage of the work was to investigate the exporting countries and their preference for the purchase of agricultural crops. So, Figure 3.10 shows the countries to which ships departed from the ports of Great Odesa, the most during the studied period.

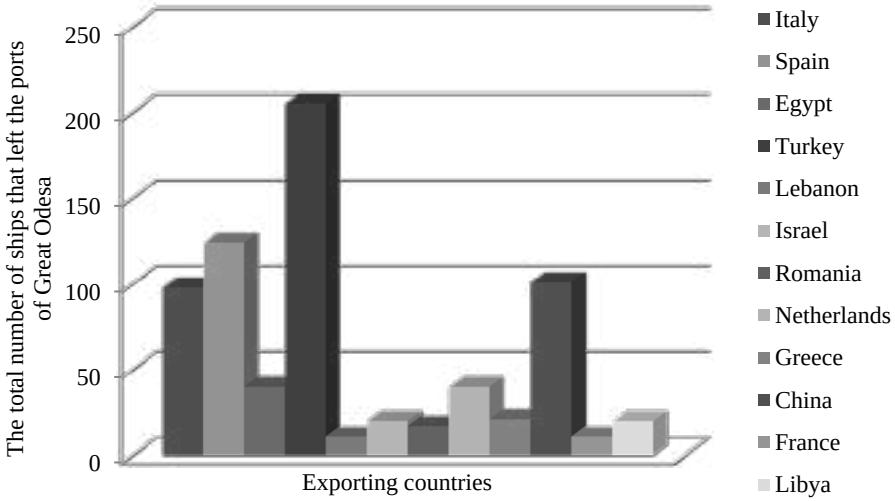

Figure 3.10 – Dynamics of the total number of ships leaving the ports of Greater Odessa
Source: generated by the author based on data from the Black Sea Grain Initiative Vessel Movements

This figure shows those countries with more than 10 ships. So, we see that the largest number of ships went to Turkey (206), followed by Spain (126); China (102); Italy (98); The Netherlands (41) and Egypt (40). Countries such as; Greece (21); Israel (20); Libya (20); Romania (17); France (11) and Lebanon (11).

The next stage was to analyze the tonnage of each agricultural crop to the exporting country. Despite the fact that in terms of the number of ships that export agricultural products from Ukraine, China has lost ground to Turkey, it occupies the first position in terms of tonnage, namely:

- corn was exported to China in quantity – 4,871,335 tons;
- sunflower meal was exported to China – 1,256,983 tons;

Corn was exported to Spain and Italy – 2,515,165 tons and 1,311,639 tons, respectively. The Netherlands, in turn, exported 1,136,800 tons of corn. These are the highest indicators among all corn exporting countries. Spain (2,033,876 tons) and Turkey (1,417,857 tons) take the leading position among the exporting countries that bought wheat.

So, we clearly see that the conduct of military operations in the maritime spaces of the Ukrainian territory significantly affects the export of agricultural crops, which in turn, of course, cannot help but affect the international state of food security. Only during the initiative's operation, due to the inhibition of the aggressor country, Ukraine under-exported about three million tons of food – this is the annual amount of consumption for 10 million people.

Based on the conducted research, the following conclusions can be drawn:

1. Ukarina's participation in the «Grain Agreement» has a positive effect on the Ukrainian economy, frees up space in warehouses for the arrival of a new crop, solves the issue of food shortages in countries wich depend on Ukrainian export agricultural crops, and equalizes prices for food on the international market.

2. This study depends on the further course of military operations, so it is necessary to carefully monitor the processes that affect the intensive export of grain crops through the sea ports of Ukraine.

3.3. Solidarity in wartime as a component of national policy

The open armed aggression finally showed that the top Russian military and political leadership abandoned the tactics of the «hybrid» war against Ukraine, which lasted from February 20, 2014 to February 23, 2022. Since February 24, 2022, the whole world has heard about the massacre in Bucha, about murders with particular cruelty, rape, torture, massive cases of looting... Rage, hatred, anger towards the Russian

occupiers overwhelmed the hearts and souls of our citizens. At the same time, the question arose: where did the Russian invaders get so much animal cruelty?

The enemy has seized settlements along with the infrastructure and local population. The aggressor has seized strategic facilities whose continuous operation ensures life in Ukraine. The development of Ukraine's economy has almost stopped. Undoubtedly, human life has always been and remains the main value, but the realities of martial law dictate an algorithm of actions for the cohesion of our Ukrainian nation.

Armed aggression by the russian federation, other states or a coalition of states is a large-scale use of military force against Ukraine through hostilities, blockade of its ports, coastline, airspace, and so on accompanied by information, psychological and cyber operations against Ukraine (Bandurovych, Alekankina, 2023).

Statement of the problem in general and its connection with important scientific or practical tasks. In response to the Russian official narratives that Ukraine is anti-russia, spoiled by the West, and a denial of identity, Ukraine is in the process of rethinking its past as European, affirming its identity, and forming a view of itself outside of Russian influences and authoritarian ideologies. We are getting rid of everything «soviet» and are beginning to speak more loudly about the fact that Ukrainians are Europeans and that Ukraine is part of the civilized democratic world. In fact, it is an outpost that protects the free world from authoritarianism. The desire for security and a common vision of the future, in which there is no room for treating Ukraine as a russian zone of influence, colony, or satellite, has united and rallied Ukrainians. We have won the battle with the past in our minds. However, unity and cohesion are not a 100 percent guarantee of successful modernization of the country. There will be conflicts, and this is normal for a democratic society (Viiskovyi khortynh Ukrainy, 2023).

The problems of cohesion have been studied by various American and domestic scholars, including: S. Hamilton, Z. Brzezinski, A. Halczynski, W. Maddison, F. Rudych, K. Bila, O. Bodruk, M. Dnistriansky, O. Domenko, M. Stepyko, and others. It is no coincidence that Ukraine is called an outpost of Western civilization. We are unequivocally and irrevocably oriented toward Europe. In a way, for objective reasons, Ukrainian society has not passed certain mandatory stages of its development and structuring, and this must now be adjusted consciously and irretrievably. A special role in stabilizing modern

international relations is played by the combination of the international security system with national security, including the right of sovereignty – the balance of the rights of states to the security and inviolability of their territories. International law has traditionally stopped at the borders of a sovereign state, within which everything was subject to its jurisdiction. Thus, the principle of protection of sovereignty was the basis for the principle of non-interference as an obligation of other actors not to interfere in the internal affairs of a state without the latter's consent (Topolnitskyi, Tychna, 2019).

Undoubtedly, today military vocabulary is especially noticeable in various spheres of public life, and therefore some aspects of its research are gaining considerable relevance: translation of military vocabulary (V. Balabin, P. Dixon), development of military vocabulary (D. Vasylenko), research of military terminology (A. Aksenov, V. Shevchuk, T. Mykhailenko). The innovative vocabulary of the military sphere in 2022 remains insufficiently studied, which stipulates its analysis in dynamic synchrony. Scholars I. Andrusiak, V. Hak, O. Dmytruk, S. Yenikieieva, Y. Zatskyi, R. Makhachashvili, O. Selivanova, and others have devoted their works to the problems of neology.

Appealing to the Ukrainian language as an important component of national identity is something extremely conservative, which draws us to the right-wing discourse. But everything turns upside down if we understand what constructivism is. If a nation is something given to us by God or by nature, then it doesn't matter what language you speak, what you say, in what contexts. But if you understand that a nation is a product of the public imagination, then it is very important what language you speak. And, accordingly, our solidarity should be built around the narratives that we disseminate in Ukrainian.

It is worth noting that the experience gained in 2020-2021 during the introduction of strict quarantine due to COVID-19 made it possible to quickly organize the educational process in a remote format under martial law.

However, students and teachers who are in areas of active hostilities or in the temporarily occupied territories do not always have the opportunity to join it due to the lack of technical means and/or Internet coverage. Participants of the educational process from other regions of Ukraine are unable to work in the usual mode due to constant air raids and the threat of rocket attacks, which make them move to shelters. This results in a forced interruption of the educational process. Under these conditions,

higher education institutions located in relatively safer regions have announced that they are accepting students who have become internally displaced as part of the opportunities provided by academic mobility.

The purpose of scientific research is to determine the specifics of the Russian-Ukrainian war, against the background of Russia's military invasion of Ukraine, to outline the concept of «cohesion» as a component of national policy.

Presentation of the main research material. The latest Russian-Ukrainian war, which is ongoing now, has a significant impact on the world economic system. There is a very dynamic retreat of the global economy from an equilibrium state, an aggravation of almost all global problems of humanity, which is a direct consequence of the Russian invasion, the chaos state of and the impossibility of future developments forecasting.

The conflict between two opposing states in an identical direction – pro-European Ukrainian and «Soviet» Russian – is the basic premise of Russia's military aggression against Ukraine. The Canadian researcher T. Kuzio very thoroughly investigated the specifics of the origins of the conflict between Ukraine and Russia. He deeply analyzed the peculiarities of the Soviet influence on the ideology of the consciousness of the people of the eastern part of Ukraine, thus highlighting «three approaches to the analysis of the history and present of Donbas, which involve focusing, respectively, on its political culture, conceptualization and identity. The political culture of this region since industrialization at the end of the 19th century has been rigid, proletarian, and violent in nature» (Kuzo, 2018).

Now Ukraine, more than ever, understands the price of freedom, it is expedient to form revolutionary European principles both inside the state and externally with powerful, proven neighbors. The mental freedom of the Ukrainian people contradicts Russian citizens, who have their own narrow vision of the same phenomena. In this way, the following reasons can be singled out, why Russian «experts» always perceive Ukraine incorrectly (Hryniv, 1997). First, they try to analyze a country that exists only in their imagination and corresponds to their stereotypes, without paying attention to reality. Secondly, they refuse to perceive Ukrainians as a separate people, and Ukraine as a sovereign country, and therefore their «analysis» is extremely subjective. Third, the Russians have never undergone a process of de-Sovietization similar to decentralization in post-war Germany and, unlike Poland, have not come to terms with their imperial past.

The idea of «national awakening» suggests that nations exist «in themselves» before the realization of nations «for themselves» is achieved.

But the analogy is not applicable here. In particular, the pre-industrial world is indeed very rich in cultural differences and all kinds of shades. But very often it is excessively rich to give birth to something similar to nations – even nations «in themselves» (Hryniv, 1997).

The fact is that all the complex ramifications of kinship, occupation, settlement, political alliances, social status, religion, rituals very often intersect with each other, forming an extremely complicated structure, and not at all those noticeable cultural differences between large human communities, which are usual for us in the modern world and which we consider as national borders.

The modern Russian-Ukrainian war is a war not only with Putin's Russia, it is a war for the complete and final break of Ukraine with the Soviet / totalitarian and imperial heritage.

It can be assumed that it was the sense of unity that ensured the preservation of emotional stability and optimism of Ukrainians at the pre-war level. And it is quite possible that unity in the most difficult time for the country is the magic code of the Ukrainian nation, which gives it strength and indomitability. This was the case in 2014 and in 2004-2005. Because (remember?) «together we are many, and we cannot be overcome» (Viiskovyi khortynh Ukrainy, 2023).

The insidious and cynical Russian aggression demonstrated the unusual unity and consolidation of civil society in Ukraine, in particular, raised volunteering to the scale of a nationwide phenomenon, which became one of the basic components of successful resistance to the military-political armada of Putin's Russia. The scale of volunteer and public practices, initiatives and events requires generalizing and systematic studies, the results of which should be promptly represented in the world, primarily in the media, information and cultural spaces. Institutions of civil society surprisingly quickly transformed their own activities, reoriented themselves to humanitarian and informational projects; instantly built/restored effective forms of interaction between various stakeholders.

The history of rallying and strengthening social efforts during the Revolution of Dignity, the occupation of Crimea and the armed conflict in Donetsk and Luhansk regions was repeated. An extensive network of public activities was formed for quick, versatile and large-scale activities aimed at resisting Russian aggression in Ukraine and overcoming catastrophic humanitarian consequences: assistance to the Armed Forces and territorial defense; comprehensive assistance to the civilian population: evacuation, search for missing persons, humanitarian aid (medicines, food,

basic necessities), psychological and medical assistance, search for housing for internally displaced persons (according to preliminary estimates, almost 6.5 million people moved to other regions of Ukraine, abroad – 3.5 million) (Analitychnyi zvit, 2022).; documenting war crimes and crimes against humanity; implementation of information resistance: debunking fakes, purposeful dissemination of true information within the country and abroad.

Relevant groups in social networks and Telegram channels are a powerful source for searching for citizens who disappeared during hostilities, for obtaining information about the food situation, the actions of the Russian military and the general situation in occupied settlements without stable mobile communications.

Such resources, in addition to informational support, are an important platform for strengthening social cohesion not only for solving humanitarian problems and evacuation of the civilian population, but also for coordinating and organizing peaceful measures against war. Cohesion of the country is a consolidation not only of people, but of institutions and communities, among which the state and civil society are the most important. Their consolidation in Ukraine as a democratic country requires an organic combination of subordination as the main principle of interaction in the state and coordination as the corresponding principle of civil society. As we saw above, such consolidation in the crisis conditions of society is a requirement of time.

The democratic and humanistic consolidation of Ukrainian society involves tolerance of the other's position and defending one's position not with the help of hidden or overt manipulations, but in public dialogues, where the opponent's dignity and his right to a worldview position and the truth are respected.

The concept of «cohesion» has recently turned into a slogan that almost all Ukrainian politicians and political forces use, trying to inspire confidence in their views, programs and slogans (about the language, social benefits, foreign policy position of Ukraine). And this is natural. Erich Fromm once noted: «True freedom and independence, as well as the eradication of all forms of oppression, will be able to bring into action such a force as the love of life...» (From, 2009). Until each of us, as a part of the Ukrainian people, declares freedom and independence as the main value and eradicates the «slave mentality» from ourselves, we will not fully understand why the independence of the Ukrainian state is a fundamental constitutional value (Pyrozhkov, 2016).

High cohesion among the population means that they have a high level of trust in each other, are ready to cooperate, and respect the rules of common life. And relations between the authorities and citizens in cohesive communities are perceived as fair.

Cohesion can be both a goal and a means of achieving various tasks in the community. More cohesive communities, for example, can be considered attractive to live in and invest in – thanks to less crime and conflict. In communities where cohesion is weak, conflicts tend to be more destructive. However, the cohesion of the community does not mean that there is no risk of conflicts. Conflicts will still arise, but they are more likely to be resolved more effectively in cohesive communities; such communities are more resistant to division and are more willing to use effective conflict resolution mechanisms to protect common norms and values (dialogue practices, facilitated community meetings, mediation, conflict resolution circles, etc.).

In the process of forming the concept of the notion of "cohesion", the broadest approximation to shape up the definition of territorial cohesion is acquiring the way to be applied as a multi-faceted integrated approach, that is, the concept of territorial cohesion can be considered from the point of view of achieving the ultimate goal - balanced sustainable development and smart growth for all regions with the provision of access to infrastructure services, reducing economic and social disparities, increasing the competitiveness of the territory through the effective use of material and immaterial potentials of the territories, ensuring investments in the human capital of the territory; based on the principles of polycentricity of development, regional cooperation, coordination and harmonization of policies and instruments (at the national, regional and local levels) in accordance with the cohesion policy (Markowski, 2009).

It is obvious that today it is very difficult for society to consistently develop, to move unitedly towards the achievement of the goal. Even at the moment of existential threats, external aggression in particular, which is very relevant for Ukraine, it is difficult for such a society to mobilize to counter threats (Pyrozhkov, 2016).

Interrelated phenomena with anomie are social pessimism, a feeling of powerlessness to influence the state of affairs in the country; cynicism, when people begin to share the opinion that the end justifies the means. Actually, unity around countering the threat is rather an exception. Nevertheless, in particular, Ukrainian society became an illustration of how the existential threat to the state, to Ukrainian society in 2014, 2022

activated it. And as a result, we are currently talking about the development of some positive idea, for the sake of which society can move in the long term period. Uniting around opposition to some phenomenon is short-term by definition. Because when the threatening phenomenon disappears, so does the cohesion.

Conclusions. Analyzing the understanding of the concept of «cohesion» in modern conditions, we can single out several aspects of its understanding and interpretation:

1) one of the important points that ensure cohesion is the development of the armed forces;

2) cohesion in readiness for joint defense of the state during a military conflict;

3) unity and readiness to repel the aggressor is our strength and the guarantee of preserving Ukrainian statehood;

4) we are united in striving for a just peace, good and well-being for Ukraine, which means for each of us and for future generations;

5) Ukrainians are united: «we are unanimous in our thoughts, united mentally and physically. Ukrainians are a strong and eternal nation»;

6) we are a unified country, a unified people, a unified nation;

7) «The President of Ukraine has become a source of inspiration and a motivator for the entire country»;

8) «the society, which even before the war suffered from inter-party disputes and divisions, became united as much as a young country can become united 30 years after its revival» (Zelenskyi, 2022);

9) «our nation is more united than ever. We now have common dreams, ideas and goals»;

10) «It is unity/cohesion in the most difficult time for the country that is the magic code of the Ukrainian nation, which gives it strength and indomitability» (Zelenskyi, 2022a).

Summarizing, we note that today the concept of "cohesion" is a component of the national idea of a united and indivisible Ukraine, the basis of resistance to the enemy, the basis of our stability and mutual support, the basis of relations between the authorities, citizens and civil society, the guarantee of our success, a strong independent state and the restoration of its territorial integrity. Hopehully, the thesis that the longer the war goes on, the more the level of social unity falls, will not work.

3.4. Assessment of the damage of the Russian-Ukrainian war and the landscape of post-economic recovery

The local wars and military conflicts have serious socio-economic consequences for the countries that become its participants. These consequences are really destructive and long-lasting, affecting various aspects of society. First, military conflicts lead to massive destruction of cities, villages and infrastructure, people's property and deprivation supplies of life's needs. Second, it usually leads to economic decline because they disrupt production and infrastructure, and to a decrease in the country's GDP and an increase in unemployment. Thirdly, lead to large-scale resettlement of the population, which cause serious tension in society and lead to an economic and social crisis. In wartime, national unity and solidarity are crucial to overcome the social and economic losses that arise from conflict. Therefore, building and maintaining national cohesion is a critical component of any country's policy during times of war. It involves creating a sense of common purpose, shared values, and social harmony among the people. These losses could be mitigated by fostering a strong sense of unity among the nation. This can be achieved through measures such as promoting national symbols, history, and culture, as well as providing social welfare programs and economic support. Ultimately, a united and cohesive society is better equipped to address the challenges posed by wartime and to rebuild in the aftermath. Therefore, the study of socio-economic losses in military conflicts is a very relevant and important task, and could help develop postwar recovery strategies and minimize the socio-economic consequences of war.

Since 2014 the Russia-Ukraine war is a significant consequence of the current imbalances and instability of the global economic and political order. *By decree of the President of Ukraine at the request of the National Security and Defense Council, from February 24, 2022, martial law was introduced throughout the territory of Ukraine in connection with the full-scale invasion of Russian troops into Ukrainian territory begun.* The ongoing military conflict caused by Russian aggression has led to significant social and economic costs, including destroyed homes, infrastructure, and lives. Furthermore, the war poses a threat to the world's economic recovery from the pandemic shock, presenting numerous challenges for policy makers to address (include rising inflation, food and energy security concerns, and disruptions to supply chains).

According to experts from the Kyiv School of Economics (KSE) 'Russia will pay' project, losses in sectors like education, energy, healthcare, infrastructure, trade, and transportation continue to rise. On February 2023, the total amount of damage inflicted on Ukraine's infrastructure as a result of hostilities, bombings, and missile attacks had increased by another $6 billion, bringing the total to $143.8 billion (based on replacement cost) (Kyiv School of Economics, 2023). The overall estimate of direct losses to infrastructure in monetary terms as of February 2023 is presented on Fig. 3.11.

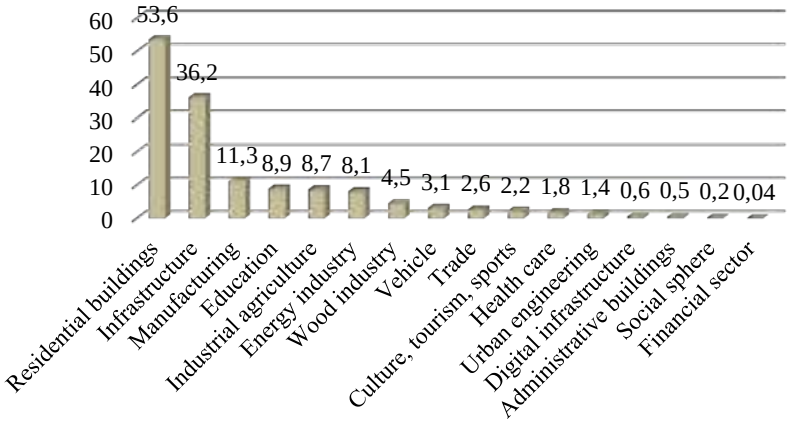

Figure 3.11 – Total estimate of direct infrastructure damages by sector as of February 2023, billion USD
Source: Kyiv School of Economics

The largest share of losses is housing property – over 150,000 residential buildings, including homes, apartment complexes, and dormitories, have been damaged or destroyed, resulting in damages totaling $53.6 billion. In second place is damage caused the infrastructure sector, that are estimated at $36.2 billion; more than 25,000 kilometers of roads of national and local importance and 344 bridges and overpasses were destroyed or damaged. According to the Ministry of Communities and Infrastructure Development of Ukraine, in 2022, the passage through 78 bridges on national roads was restored. The largest number of bridges restored were in the Kyiv region (20 out of 24 objects) and the Chernihiv

region (20 out of 27 objects). In 2023, the passage through two bridge crossings was restored in the Mykolaiv and Kharkiv regions. The increase in government spending has a positive impact on road restoration, which is a crucial step towards ensuring the country's development and economic growth. Without it, it will be difficult to achieve the projected 4.6% GDP growth, as planned by the Cabinet of Ministers.

The total direct losses of companies' assets are estimated at $11.3 billion, affecting hundreds of private and state-owned enterprises, as well as tens of thousands of small private businesses. The losses were incurred in two ways: accidental destruction during shelling of military units and settlements, and intentional destruction as part of targeted strategic missile strikes. The damages include loss of fixed assets, capital investments, and inventories of finished goods and intermediate materials. Business assets account for about 10% of total infrastructure damage, with the metallurgy industry suffering the most significant losses. The Donetsk region was the hardest hit, accounting for almost half of the total direct damage to businesses, followed by Kharkiv, Luhansk, and Kyiv regions.

As of the end of February 2023, the losses in the education sector had increased to $8.9 billion, a rise of $300 million compared to December expert's estimates. Of the 3,170 educational institutions currently affected, nearly 1,500 are secondary schools, 909 are preschools, and 528 are higher education institutions.

The estimate of losses on the agricultural sector and land resources currently stands at $8.7 billion. As of the end of February 2023, the number of damaged and destroyed vehicles has also significantly increased up to 28.5 thousand, increasing by $2.1 billion. In total, as a result of the war, 223.4 thousand cars have been destroyed or damaged, amounting to $3.1 billion. It is projected that in 2023, planting areas will decrease by 7 million hectares due to demining contaminated lands. Agricultural producers have appealed to the Ministry of Agrarian Policy and Food to demine almost 2.5 million hectares of agricultural lands, the most polluted of which are in the Kherson, Mykolaiv, and Kharkiv regions. Currently, state institutions are engaged in demining operations, but their top priority is to demine residential areas, hospitals, schools, roads, and other infrastructure facilities. Farmers in affected areas suffer as a result because without urgent humanitarian demining of some agricultural lands, they will not be able to plant fodder crops for their livestock (The State Emergency Service of Ukraine, 2023).

The estimated losses to Ukraine's energy sector have also increased, amounting to $8.1 billion, due to damage to nuclear power plants as well as to natural gas transportation facilities. The occupation of Chernobyl Nuclear Power Plant (NPP) caused by Russian aggression of Ukraine raised grave safety concerns and the challenges faced by the energy sector. The IAEA took an unconventional step by organizing 'permanent missions', carrying out inspection activities without leaving the plant. This decision emphasizes the need for demilitarizing the areas around nuclear power plants and emphasizes the significance of nuclear energy as a safe and clean source of electricity. The Zaporizhzhia NPP did not suffer significant damage during the war, but its condition requires systematic modernization and expansion. The loss of control is a reality due to the annexation of Crimea and instability in Donbas, which poses risks to the safety of nuclear power plants in Ukraine. However, experts emphasize that the loss of control does not mean that nuclear energy in Ukraine is losing its potential, as the safety system of Ukrainian NPPs is very effective. Worth to emphasize the importance of expanding cooperation with European countries in the field of nuclear energy safety and ensuring the technical development of Ukrainian NPPs (UN, 2023).

The ecological damage amounts $4.5 billion in Ukraine, with some natural resources lost forever. The Russian military has destroyed the environment, polluting the land, air, burning forests, and depleting natural resources. The most affected are the forested areas, with almost three million hectares of forest damaged, which is nearly one-third of Ukraine's forested territory. Additionally, 500 thousand hectares are currently under occupation or in the zone of military conflict.

The KSE experts estimated indicate that by the end of winter 2023, the amount of damage inflicted on the trade sector increased to $2.6 billion, and the amount of infrastructure destruction in the healthcare industry – to $100 million, bringing the total direct losses in this sector to $1.8 billion. Meanwhile, according to the most recent calculations, the estimate for losses in the industrial and enterprise sectors has been reduced from $13 billion as of December 2022 to $11.3 billion as of the end of February 2023. The reduction was caused by a reevaluation of the status of the enterprises after receiving updated information on the damage to their assets from shelling.

According to a new joint assessment released by the Government of Ukraine, the World Bank Group, the European Commission, and the UN, Ukraine's needs for recovery and reconstruction have risen to $411 billion

(equivalent to €383 billion). This estimate covers a period of one year, from the moment of Russia's invasion of Ukraine on February 24, 2022, to February 24, 2023. It is expected that the costs for reconstruction and recovery will span over 10 years and will combine needs in both public and private costs.

The Rapid Damage and Needs Assessment 2 (RDNA2) provides a comprehensive overview of the consequences of the war in twenty different sectors. The report provides a quantitative assessment of the direct material destruction of infrastructure and buildings and describes the impact on the lives and livelihoods of the population. RDNA2 also identifies the amount of funds needed for recovery and reconstruction. According to RDNA2, Ukraine will require $14 billion of investment in 2023 for priority reconstruction and recovery. Meeting these needs will require $11 billion in financing in addition to what the government has already provided in the 2023 state budget. This amount includes unfunded budget needs of $6 billion and an additional $5 billion for financial support to state-owned enterprises and private sector activation. According to the assessment, the highest needs are in the transport sector (22%), housing sector (17%), energy sector (11%), social protection and livelihoods sector (10%), clearance of explosive hazards (9%), and agriculture sector (7%). The energy sector has seen the biggest increase in the level of destruction, where the level of destruction has increased by over five times compared to June 2022. The estimated needs for the next decade take into account inflation, market conditions, sharp increases in prices in regions of mass construction, rising insurance payouts, and a future transition to less energy-intensive, more resilient, inclusive, and modern projects. In addition, the needs have also increased the most in the frontline regions: Donetsk, Kharkiv, Luhansk, and Kherson regions.

The estimates contained in the two released 'Rapid Assessments of Damage and Recovery Needs' should be considered minimal, as needs grow amid the ongoing war. However, since the publication of RDNA1, the level of damage inflicted has not increased as much as anticipated due to several factors. First, the most intense fighting continues to be limited to areas that have already suffered significant damage. Additionally, certain needs of the country have already been addressed by the Government of Ukraine with the support of its partners. For example, over 500 damaged healthcare facilities have been partially or fully repaired. The energy and transport sectors have received equipment, materials, and financing for rapid repairs. Another factor has been the ability to maintain the

functioning of the government and the provision of essential public services, which has helped to limit the growth of costs for recovery and reconstruction. According to the report, direct damage to buildings and infrastructure amounts to over $135 billion in the most affected sectors, including housing (37%), transportation (26%), energy (8%), trade and industry (8%), and agriculture (6%). Since the implementation of RDNA1, the level of destruction has increased significantly in the energy, housing, and transportation sectors. The damage to the agricultural sector is also significantly higher, reflected in the increased level of destruction of basic means of production and updated data (World Bank Group, 2023).

It is particularly important to emphasize the aspect that the President of Ukraine has signed the parliamentary bill No. 8027 amending the Law 'On the State Budget of Ukraine for 2022' regarding the creation of the Fund for the Liquidation of the Consequences of Armed Aggression, which proposes to use the assets of forcibly liquidated Russian companies for the restoration of damaged objects as a result of Russian aggression. The law provides for the creation of a fund for the liquidation of the consequences of armed aggression, which will be filled with confiscated financial resources of Russian companies in Ukraine, as well as funds that will be raised from the sale of property forcibly seized from legal entities of the Russian Federation. The Cabinet of Ministers will develop and approve the relevant procedure for the implementation of the seized assets of the occupying country. It is forecast that the adoption of the law will contribute to the creation of a fund for the elimination of the consequences of armed aggression, which will be financed by sources that will provide financial support for priority measures to restore critical infrastructure that has been affected by the hostilities (Verkhovna Rada, 2022).

It is proposed that all funds from the nationalization of Russian assets will be used in agreement with the Committee of the Verkhovna Rada on issues of budget for the following areas: construction of public buildings; reconstruction and major repairs of critical infrastructure facilities; reconstruction and major repairs of buildings to provide housing for ATO veterans and individuals who lost their homes; development of project (project and estimate) documentation for objects destroyed; purchase of residential premises for citizens, relevant real estate objects, objects of construction destroyed as a result of hostilities, terrorist acts, sabotage; purchase of computer and multimedia equipment (which was destroyed, damaged or stolen) for educational institutions; restoration of electricity, lighting and gas supply.

On January 26, 2023, the Multi-agency Donor Coordination Platform to support Ukraine's repair, recovery and reconstruction began its work. This will enable close coordination between international donors and international financial organizations, and will ensure a coordinated, transparent, and accountable provision of support (European Commission, 2023b). The first meeting of the platform was held in a video conference format and was attended by high-ranking officials from Ukraine, the European Union, the G7 countries, as well as representatives of financial institutions such as the European Investment Bank, the European Bank for Reconstruction and Development, the International Monetary Fund, and the World Bank. Later, other donors will be able to join this initiative. The meeting launched a broader process to ensure closer coordination between all key players providing short-term financial support as well as long-term assistance during the reconstruction phase, building on the outcomes of conferences in Lugano, Berlin, and Paris to help bridge the gap between needs and resources.

The second meeting of the steering committee of the Inter-Agency Donor Coordination Platform for Ukraine took place on April 5, 2023. The aim of the meeting was to discuss the coordination of urgent financial needs and the future economic recovery and reconstruction of Ukraine. During the second meeting, the Ukrainian government presented their budget needs for 2023, which they estimated to be $39.9 billion. After the approval of the IMF's four-year support program for Ukraine with a budget of $15.6 billion and taking into account the macro-financial assistance package Plus from the EMS for an amount of 18 billion euros (€4.5 billion of which have already been paid out in 2023), as well as contributions from other donors, the Ukrainian government confirmed that they have closed the budget deficit for 2023. The meeting took place after the publication of the updated Rapid Damage and Needs Assessment, which presents current estimates of the destruction caused by Russia's aggressive war (EU Neighbours, 2023).

Based on the report, the Ukrainian government presented its priority needs for the fastest possible recovery in 2023 in the areas of energy infrastructure, humanitarian demining, critical and social infrastructure, housing, and private sector. In 2023, Ukraine will need $14.1 billion for critical and priority investments in reconstruction and recovery. Meeting these needs will require $10.8 billion in funding in addition to the $3.3 billion already allocated by the Ukrainian government for these purposes in the 2023 budget (European Commission, 2023a).

According to the First Deputy Prime Minister of Ukraine - Minister of Economy of Ukraine, access to financing is an extremely important and urgent issue for businesses today. Currently, there is public financial assistance, but the country's development will mostly be achieved through private capital. However, there is an idea to structure a private investment fund with the support of BlackRock and JPMorgan by the end of 2023 to be able to attract concession capital. This is both access to cheap financing and a sign of foreign investors' trust in Ukraine. In this context, it is also important to provide Ukrainian businesses with access to financing. The state will increase the capabilities of the 5-7-9 program, in particular, expanding it to processing enterprises. When Ukraine faced the blockage of seaports, it was necessary to preserve export earnings. The development of processing industries and the restoration of destroyed enterprises will enable the country to export value-added products and fill the budget with foreign currency revenue (Cabinet of Ministers, 2023).

The Organization for Economic Cooperation and Development (OECD) has outlined a comprehensive strategy for infrastructure recovery in Ukraine, which includes establishing an institutional framework for infrastructure development, prioritizing investment in critical infrastructure sectors, leveraging international assistance, promoting good governance practices, and building local capacity. To support infrastructure recovery in Ukraine, the government should prioritize investment in critical infrastructure sectors such as transport, energy, water, and telecommunications, and establish a clear institutional framework to oversee the infrastructure recovery process. Although it should work closely with international partners to leverage technical and financial assistance for infrastructure recovery, promote good governance practices, and invest in building local capacity for infrastructure development (OECD, 2022). The recommendations into the infrastructure recovery process in Ukraine that can be helpful for policymakers and practitioners in other countries facing similar challenges is:

1. Establishing an institutional framework for infrastructure development: establish a clear institutional framework to oversee the infrastructure recovery process, including clear roles and responsibilities for different agencies, as well as mechanisms for coordination and collaboration between them.

2. Prioritizing investment in critical infrastructure sectors: prioritize investment in critical infrastructure sectors such as transport, energy, water,

and telecommunications – it will help to address the most pressing infrastructure needs and support economic growth.

3. Leveraging international assistance: cooperation with international partners to leverage technical and financial assistance for infrastructure recovery, including support for project preparation, financing, and implementation.

4. Promoting good governance practices: promote good governance practices in the infrastructure recovery process, including transparency, accountability, and stakeholder engagement – to build trust with the public and ensure that infrastructure investments are aligned with national priorities.

5. Building local capacity: invest in building local capacity for infrastructure development, including skills development and knowledge transfer – it will help to ensure that the benefits of infrastructure investment are sustained over the long term.

By following the suggested recommendations, the government can effectively address the most pressing infrastructure needs, support economic growth, and build trust with the public to ensure that infrastructure investments are aligned with national priorities.

Integration into the EU and access to its markets can provide an important market for Ukrainian businesses and enable necessary reforms for economic development. National security is a prerequisite for investment and economic development. It should be noted that the National Council for the Recovery of Ukraine from the Consequences of the War, in accordance with the Presidential Decree of April 21, 2022, No. 266/2022, developed a plan of measures for post-war recovery and development of Ukraine, a list of proposals for priority reforms and strategic initiatives, draft regulatory acts, the adoption and implementation of which are necessary for the effective work and recovery of Ukraine in the military and post-war periods, including the Project Plan for the Recovery and Development of the Ukrainian Economy (National Council, n.d.).

The sustainable recovery of Ukraine should be based on the following key elements: integration into the EU and access to the markets of the EU and G7, national security, macroeconomic stability, favorable business environment, transformation of priority sectors, strong human capital, efficient infrastructure. Strengthening the protection of critical infrastructure should be one of the main directions in building a basic platform, which will ensure the development of transparent government, contributing in turn to overcoming the challenges and threats that have

arisen before our country, enabling integration into the European economic space thanks to Ukraine's candidate status and accession to the EU, long-term economic growth, and financial security overall.

The goals and key reforms according to the Project Plan for the Recovery and Development of the Ukrainian Economy are presented in Fig. 3.12.

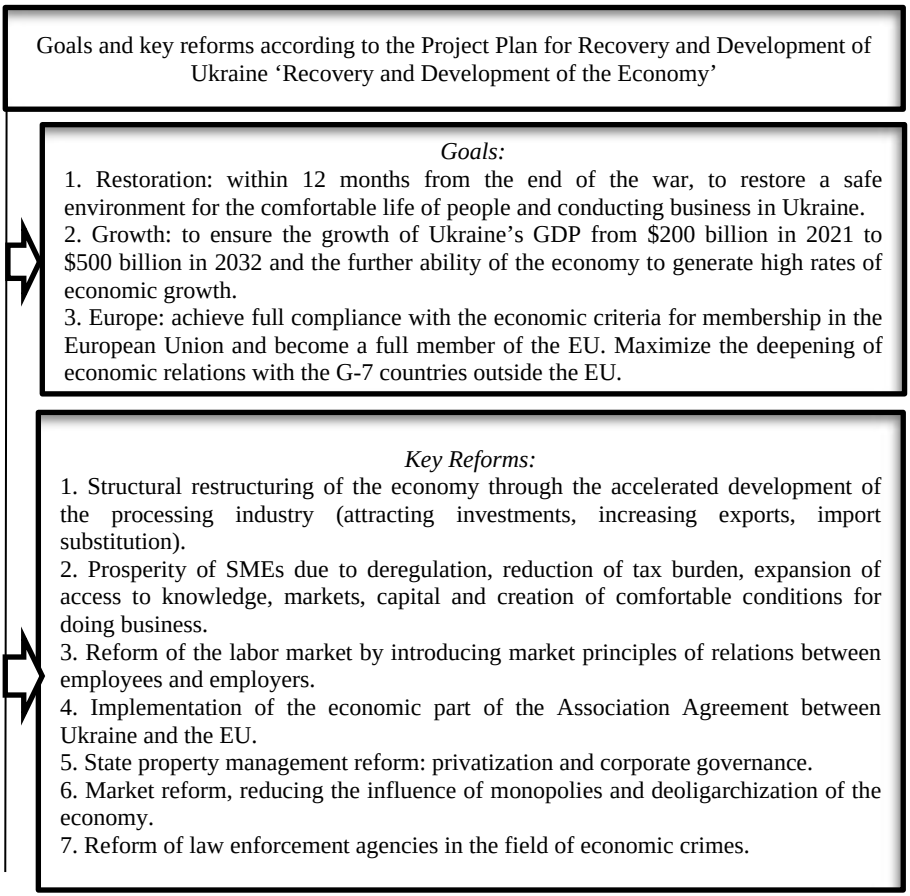

Figure 3.12 – Goals and key reforms according to the Project Plan for Recovery and Development of Ukraine 'Recovery and Development of the Economy'
Source: National Council for the Recovery of Ukraine from the War

Thus, macroeconomic stability is crucial for ensuring economic resilience and supporting the investment climate. Russia's ongoing invasion of Ukraine poses a significant threat to peace, security, and prosperity in the Euro-Atlantic region. The aggressive behavior of Russia includes unlawful and repeated attacks on Ukraine's civil and energy infrastructure, resulting in millions of Ukrainians being deprived of basic humanitarian services. Furthermore, this aggression has a detrimental impact on the global food supply and creates danger for vulnerable countries and populations worldwide. Therefore, favorable business environment is necessary, which provides for the support of entrepreneurship, reducing bureaucratic procedures, increasing property rights protection, and adherence to business ethics. The transformation of priority sectors such as energy and transportation can help ensure sustainable economic growth and increase the country's competitiveness. Strong human capital, including the quality of education and population health, is an important factor for the development of an innovative economy. Efficient infrastructure, such as transportation, energy, and internet infrastructure, is a key factor in supporting economic growth and ensuring business development.

In the new economic reality, the primary focus for Ukraine's economy should be economic freedom and creating conditions for doing business, attracting investments, digitalization, and other related areas. This situation will require, among other things, legislative regulation to ensure proper, efficient, targeted, and controlled use of the financial resources attracted through improved mechanisms. In the medium-term perspective, Ukraine's ability to function effectively within the framework of international financial cooperation and fulfill corresponding obligations, as well as ensure rapid post-war recovery of economic, infrastructure, and humanitarian potential, can only be guaranteed through cooperation with international partners.

Moreover, it is important to highlight the significance of social cohesion and unity in Ukraine's economic recovery. The presence of a strong feeling of togetherness and a shared sense of purpose can create a more favorable environment for economic development, which is crucial for post-war recovery. Building a sense of national unity and identity is essential to the success of the post-war recovery strategy. This underscores the need to involve the private sector in the recovery process, as they can make significant contributions to the reconstruction of infrastructure and the economy. Overall, a comprehensive and integrated approach to

infrastructure recovery, coupled with social cohesion and unity, can facilitate sustainable and inclusive economic development in Ukraine.

The prospects for further research on the outlined issues are seen in the development of a doctrinal model for the Strategy for Post-War Recovery of Ukraine in the medium term until 2030, which should be strategically verified and based on a holistic integrative model of the system of principles of the rule of law and sectoral legal principles, one of the components of which should be the vector of post-war recovery development with correspondingly identified components and approved financial indicators. In particular, the program document should provide for the process of redistribution of financial resources, their accumulation for solving priority state tasks, expanding investment opportunities for professional participants involved in post-war recovery; creating a comprehensive and efficient system of financial institutions, public associations; containing blocks that cover principles, methods, stages of effective and result-oriented implementation of tasks set in the strategy and its strategic guidelines for the reconstruction of infrastructure and the economy of Ukraine. A comprehensive approach to reform will give a powerful impetus to achieving a high level of development of the national economy. For each of the outlined directions, it is necessary to define strategic goals, towards the achievement of which the efforts of the main financial resource manager in the country will be directed, as well as quantitative and qualitative indicators that will indicate their achievement. The wide involvement of financial market participants and an expert audience on budgeting and macro-level issues – public finances – in this professional discussion will contribute to the development of a Strategy that will form the basis for sustainable and inclusive development of the national economy as a whole, increasing the well-being of all citizens of Ukraine without differential division in particular.

3.5. Provision of social protection for persons with disabilities affected by the War in Ukraine: a critical analysis

The political and social context of the war in Ukraine is complex, large-scale and multifaceted. This has affected the country’s geopolitical, economic, infrastructural and health consequences and has a global impact. The war devastated various spheres of life, including social guarantees and protection of people with disabilities and military personnel with

disabilities due to hostilities (Rawtai et al., 2022). This challenged the culture of the Ukrainian social protection system. The war also led to a humanitarian crisis, with many Ukrainians needing food aid and food. Eastern Europe became home to millions of refugees without a systematic and coordinated government response. This occurred during an economic recession in Europe, which led to trade embargoes and challenges to food production, networks, and economic sanctions by NATO countries and their allies. The consequences of the war in Ukraine are felt outside the region, with implications for food production in the short and long term (Kovács et al., 2022).

The war had a powerful impact on people with disabilities in the war zone (Through this conflict in Ukraine, what happens to persons with disabilities?). People with disabilities in Ukraine are particularly vulnerable during the war (Through this conflict in Ukraine, what happens to persons with disabilities?), as evidenced by the lack of access to information, medical care, affordable shelter, evacuation plans, and humanitarian corridors. This problem is compounded for those in residential care because the war disproportionately affects them (One year of war: persons with disabilities in Ukraine). This is further evidenced by the fact that approximately three million people with disabilities and their families live in Ukraine and are at risk of human rights violations, such as lack of access to safety, assistance and recovery support. The International Disability Alliance and the European Disability Forum called on political leaders and humanitarian organisations to ensure the safety of people with disabilities and respect their international obligations (Through this conflict in Ukraine, what happens to persons with disabilities?). Child protection and support systems were noted to be in place. Still, the war had a powerful impact on children with disabilities, with those in residential care, internally displaced persons and refugees, particularly at risk of falling between the cracks (One year of war: persons with disabilities in Ukraine). The European Disability Forum reported on children with disabilities in Ukraine (One year of war: persons with disabilities in Ukraine), noting that people with disabilities face numerous obstacles to accessing safe evacuation and humanitarian aid. The war put people with disabilities and their families at risk of abandonment, violence and death (London School of Hygiene & Tropical Medicine), with many people with disabilities unable to escape the war and the consequences particularly severe for people with the most severe disabilities ("Left behind": How war is hitting the disabled in Ukraine). In response, the National Assembly of People with Disabilities in Ukraine, the

International Disability Alliance and the European Disability Forum called on political leaders and humanitarian organisations to support and protect people with disabilities by organising a workshop with the International Center for Evidence. in Disability (ICED) at LSHTM, Health in Humanitarian Crises Center at LSHTM, Edinburgh Napier University and the National Assembly of People with Disabilities of Ukraine to discuss the experiences of people with disabilities and the necessary support (London School of Hygiene & Tropical Medicine). Ukraine is required by international law to ensure the safety of persons with disabilities during wartime. However, access to vital services and humanitarian assistance is complex for persons with disabilities. They face significant challenges due to the ongoing war ("Left behind": How war is hitting the disabled in Ukraine), including access to support; the impact is especially severe for people with profound disabilities. In addition, caregivers of people with disabilities also face difficulties in accessing support (What the war means for Ukrainians with disabilities), as people with disabilities were "overlooked" in the country's evacuation plans before the start of the conflict ("Left behind": How war is hitting the disabled in Ukraine). 2.7 million people with disabilities and their families in Ukraine face a disproportionate risk of abandonment, violence, death and lack of access to safety, assistance and recovery support due to the ongoing war (London School of Hygiene & Tropical Medicine).

People with disabilities, who are already vulnerable and marginalised, are particularly affected by armed conflicts, and the situation in Ukraine is no different. To access social welfare during wartime, people with disabilities must live independently in the community. Unfortunately, this is not always possible since many people with disabilities in Ukraine live in residential institutions. In such cases, they face various problems in accessing social welfare during the war, mainly due to the lack of clear and comprehensive rules for evacuating and rescuing people with disabilities (One year of war: persons with disabilities in Ukraine). In addition, facilities housing people with disabilities can quickly end up in occupied territories or be damaged or destroyed during the war (One year of war: persons with disabilities in Ukraine), further complicating access to social security. Therefore, the government of Ukraine needs to develop and implement laws that support the rights of people with disabilities and guarantee their access to social security during wartime.

Ukraine needs a comprehensive policy and mechanisms for ensuring social protection of people with disabilities. This includes increasing the

budget for rehabilitation equipment (Kostantinovna, 2013) and creating appropriate protection mechanisms (Mishchuk et al., 2020) to bring social security closer to the EU (Vasyltsiv et al., 2019). Social policy in Ukraine is primarily passive, focused on providing social services (Voronkova et al., 2019) and adequate social protection systems. In addition, separate mechanisms for financing social protection costs should be introduced (Bagmet et al., 2017; Nalyvaiko L., 2010). The social insurance system in the USSR was designed to provide social assistance to persons with temporary disabilities (Bondaruk, 2017), and Ukraine should expand these existing mechanisms. In addition, it should consider integration with the EU to ensure access to social services and reduce poverty (Horishna, 15). In addition, the mechanisms should support the development of social rights and responsibilities and ensure financial independence (Vasyltsiv et al., 2019). This will allow people with disabilities to enjoy their rights and freedoms and to have the same level of social protection as other citizens (Mishchuk et al., 2020).

This large-scale geopolitical conflict has dramatically affected the population of Ukraine, especially people with disabilities. More than 1.7 million people have been forced from their homes by the conflict, (Bulakh, 2020) thus widening the symbolic gap between the "undeserving" and the "deserving" poor. To close this gap, the government must guarantee at least a basic level of social security. This includes limiting the number of people receiving financial and insurance benefits while extending them to the elderly and disabled (Razavi et al., 2020). Furthermore, to ensure social protection for people with disabilities, the government should focus on social integration and provide them with social services and learning opportunities (Voronkova et al., 2019). In addition, infrastructure projects that serve people with disabilities, such as NGO premises and community meeting places, should be upgraded (Dudzik et al., 2000). In addition, it is essential to ensure that the human right to social security is justified and implemented (Razavi, 2022) so that people affected by conflict can access public services such as social security and legal aid (Teremetskiy et al., 2021). Finally, collecting and analysing cost data is necessary to ensure an effective social protection system (Bagmet et al., 2017). All these measures are vital for closing the gap in social protection for people with disabilities in Ukraine.

In light of the ongoing conflict in Ukraine, it is essential to consider how existing policies and social protection mechanisms can be improved to protect people with disabilities during war better. According to the

Constitution of the People's Democratic Republic of Ethiopia, the government must progressively provide social services through social assistance and insurance to the disabled war (Lemma et al., 2019). The same constitution also institutionalised resettlement and village programs to offer for people with disabilities during military rule (Lemma et al., 2019). While the government is responsible for providing essential services, it is also vital that civil society organisations step in and provide a more integrated and inclusive response to the needs of people with disabilities during wartime. This may include providing food, medical assistance, and psychological support to ensure their rights are not violated. In addition, there is a need to ensure that people with disabilities have access to the same resources as the rest of the population. This can be done by providing access to education, employment and housing and protecting the rights of people with disabilities to ensure they are not discriminated against. This will ensure that people with disabilities can get the support they need to live with dignity and safety during wartime.

Although the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights protect the rights of persons with disabilities, they do not provide as specific protection as the UN Convention on the Rights of Persons with Disabilities (CRPD). KPI is the first international legally binding document protecting the rights of people with disabilities (NCD; Onyshchuk, 2021; Nalyvaiko et al., 2022). This key international agreement requires parties to realise the human rights of persons with disabilities fully (Convention on the Rights of Persons with Disabilities (CRPD) – Division for Inclusive Social Development (DISD); Convention on the Rights of Persons with Disabilities). The CPI obliges member states to take measures to ensure that people with disabilities are not discriminated against and have access to necessary services and facilities. It also requires them to ensure that people with disabilities have equal access to education, employment and other opportunities (NCD). In addition, it recognises the inherent dignity and worth of people with disabilities, aims to protect their rights and promotes their inclusion in society (Convention on the Rights of Persons with Disabilities). The Convention differs from the Standard Rules because it is a legally binding international convention. It also requires states to prevent discrimination and ensure access to justice for people with disabilities. International laws and conventions, such as the ICCPR, laws and acts on persons with disabilities, as well as the section of the Convention on the Rights of the Child dedicated to the rights of children

with disabilities (NCD), exist to protect the rights of persons with disabilities and work towards the implementation of the 2030 Agenda for Sustainable Development, who undertakes not to leave anyone behind (Disability Laws and Acts by Country-Area. United Nations Enable). Protection and promotion of the rights of people with disabilities should also be considered in all policies and programs (Convention on the Rights of Persons with Disabilities). People with disabilities rely on universal human rights treaties and non-binding instruments for policy and program guidance (NCD).

The consequences of the war were particularly dire for many people with disabilities in Ukraine, as they faced numerous challenges in accessing education, employment and other rights (Phillips, 2019). This article will examine the issues surrounding the rights of people with disabilities and the strategies some activists have used to address these issues successfully (Phillips, 2009). In post-Soviet Ukraine, progress was made in disability rights, and activists sought to increase the proximity of people with similar experiences, problems, and backgrounds (Phillips, 2009). However, many factors, from lack of legal protection to political or financial reluctance to ensure equal rights for people with disabilities, remain a challenge (Talanchuk, 2015). Ukraine has made progress in providing higher education institutions with the necessary resources, including assistive technologies, to provide quality inclusive education for children with disabilities (Patwary et al., 2022). In addition, language barriers were identified as a challenge to the project. They prompted educators and disability advocates in the country to develop strategies to bridge experience gaps between schools and provide students from the disability community with the necessary resources (Loreman et al., 2016). As for the employment of people with disabilities, in 2018, the Code of Labor Laws of Ukraine was amended to prohibit discrimination based on disability (Triukhan et al., 2020). Despite this, it is still difficult for people with disabilities to find work and access resources (Kryshtanovych et al., 2020). To ensure the rights of people with disabilities in Ukraine, the state must provide help for people with disabilities to access health care and education and improve the legislative framework to ensure the employment of people with disabilities (Phillips, 2010). In addition, Ukraine should improve access to mobility services (Dubovetska et al., 2016) to overcome barriers that prevent people with disabilities from accessing necessary resources.

In the wake of the post-Soviet critical review of education in Ukraine, advocates of people with disabilities encouraged a move away

from highly categorical and medicalised approaches (Loreman et al., 2016). Thus, the state took several measures to assist people with disabilities (Konstantinovna, 2013). This is the allocation of funds for assistance to people with disabilities and the provision of technical and other means of rehabilitation (Konstantinovna, 2013). Despite the lack of official recognition, terms such as "inclusion" and "inclusive education" have been used by disability rights advocates in the country (Dubovetska et al., 2016). However, this has had mixed results, as many initiatives have failed or had limited success (Phillips, 2005). This is because the state prejudiced the development of the movement for the rights of people with disabilities (Phillips, 2009). As a result, millions of people with disabilities in Ukraine live in isolation (Phillips, 2010). To successfully advance the disability rights agenda in Ukraine, disability rights activists must employ strategies appropriate to the country's unique circumstances (Phillips, 2019). This includes finding ways to support the most vulnerable, especially those with visible disabilities who face the most significant risk of being left behind in humanitarian aid to the conflict (Phillips, 2010).

Social protection of people with disabilities in Ukraine is at a critical stage and is subject to criticism familiar to those who study the welfare state. The social welfare field appreciates innovative policy writing with a critical perspective (Blau et al., 2003). It is essential to examine the well-being of older people in selected countries to gain insight into formal social protection (Lloyd-Sherlock et al., 2005). Child benefits depend on income in countries like Ukraine, and civil society remains weak (Hoelscher et al., 2010). In addition, the population's social security acts as a factor in increasing the scale of external labour migration, which indicates the system’s weaknesses (Vasyltsiv et al. 2019). An analysis of the advantages and disadvantages of a universal system can provide insight into the Dutch disability insurance scheme (Cichon et al. 2004), and it is essential to consider additional sources of social protection (Cammett et al. 2011). Ethnographic evidence and analysis are also needed to challenge restrictions on pensions and social benefits (Bulakh, 2020). Ultimately, it is essential to look at the future of social protection in a new way to ensure the well-being of people with disabilities in Ukraine (Standing, 1996).

In conflict, refugees with disabilities struggle to access social protection. The International Disability Alliance stated that the armed conflict in Ukraine had forced its residents to seek asylum in other countries, including Western European countries, and that these asylum seekers with disabilities and their relatives face certain disability-related

obstacles. Leaving the conflict zone in Ukraine (Committee on the Rights of Persons with Disabilities Holds General Discussion on Persons with Disabilities in Situations of Risk and Humanitarian Emergencies). The issue of disability should be carefully considered within the framework of "persecution" in refugee law (Committee on the Rights of Persons with Disabilities Holds General Discussion on Persons with Disabilities in Situations of Risk and Humanitarian Emergencies). The Committee highlighted in detail the obligations of states to address the situation of asylum seekers with disabilities during a unique dialogue on the situation in Ukraine, which took place at the 27th session of the Committee (Committee on the Rights of Persons with Disabilities Holds General Discussion on Persons with Disabilities in Situations of Risk and Humanitarian Emergencies). It should clearly state that persons with disabilities should be provided with a "procedural accommodation" that is not conditioned by any criterion of proportionality (Committee on the Rights of Persons with Disabilities Holds General Discussion on Persons with Disabilities in Situations of Risk and Humanitarian Emergencies). This means that decision-making processes, procedures and services must be designed so asylum seekers with disabilities can access social protection. Accommodation measures must be implemented to ensure the full and effective participation of persons with disabilities in all aspects of the asylum process. This includes access to information and communication, health care and psychological support, and the necessary resources for their individual needs. In addition, these measures should also include the provision of sign language interpreter services and the use of assistive technologies such as augmentative and alternative communication (AAC) devices. Providing social protection for refugees with disabilities is a moral imperative and a legal obligation.

The right to social security is a fundamental part of human rights and is necessary for people with disabilities to have access to social security during the war (About the right to social security and human rights). This right is enshrined in the Universal Declaration of Human Rights and other international conventions, particularly the Convention on the Rights of Persons with Disabilities (Social protection for people with disabilities in Europe). Therefore, it is essential to take measures to guarantee access to social security for people with disabilities during conflict and war (Social protection for people with disabilities in Europe; Moroz, 2022). One way to do this is for governments to introduce and promote welfare schemes that provide benefits at a fixed rate to protect against unemployment,

sickness, disability, death and old age (Historical Background and Development of Social Security; Making the Right to Social Security a Reality for All Workers). Another measure that can be taken is to ensure the participation of people with disabilities in health emergencies and equal access to adequate health services (Disability). This includes providing access to medical care and social protection measures. It is also essential to ensure that people with disabilities are involved in the decision-making process regarding social welfare measures and provide them with the resources necessary for full participation in society. By taking these essential steps, governments can ensure that people with disabilities can access social security during the war (Disability).

Social protection reforms are necessary for Ukraine to ensure adequate social protection for people with disabilities (). A comprehensive transition process to community life is needed. Disability-friendly reconstruction is required to ensure that people with disabilities have access to the same social protection policies as their non-disabled counterparts (International Day of Persons with Disabilities: The international community must support persons with disabilities in Ukraine). To ensure this, long-term integration procedures must be fully accessible to people with disabilities to ensure their full participation in society (International Day of Persons with Disabilities: The international community must support persons with disabilities in Ukraine). This will provide access to education, employment, health care, housing and social protection policies. To ensure adequate social security for people with disabilities, the government must implement reforms to ensure access to services and resources and an environment promoting the full integration of people with disabilities into society. This includes providing appropriate resources and support and raising awareness and training for those working with people with disabilities. In addition, it is essential to ensure that all laws and regulations align with international disability laws and standards.

In addition to the economic and social context of the war in Ukraine, studies have found that the war had a significant impact on people with disabilities (Beveridge, 2000). This is especially true for people with disabilities living in war-affected areas, as they often lack access to social protection measures that could help them cope with the conflict (Marmot et al., 2012). To this end, many countries have developed a range of social protection measures, such as guardianship, adoption, daycare and education (Zastro et al., 2016). Social protection refers to public actions responding to economic and social risks that individuals and their families may face,

including access to essential services, social insurance and poverty reduction (Devereux et al., 2004). These measures are often implemented in stable, conflict or emergencies to protect the most vulnerable members of society (Andrews, 2012). In addition, the growth of social protection in developing countries has contributed to a better understanding of the factors that influence social protection policies (Barrientos et al., 2009). This includes the threat of conflict and social unrest, as well as the need to improve plans for the education sector (Bundy, 2009). In addition, policymakers have recommended several initiatives to guide future legislative developments and court decisions (Liebman, 1976) and to ensure improved policy implementation and outcomes (Hagemejer et al., 2013). Therefore, additional social protection policies such as those mentioned above should be adopted to protect people with disabilities affected by war. This ensures that policymakers can better protect those most vulnerable to the effects of war.

Governments and international organisations have taken several initiatives to ensure that people with disabilities have access to social protection during the war (Deacon, 2013; Barbier, 2003). These initiatives range from recommendations on social protection to five-year and ten-year plans for developing social security policy (Blau et al., 2003; Eckert, 2004). In addition, programs and political initiatives were created to provide grants and other forms of social protection (Lipsky, 1984; Mendes, 2017). In addition, the voluntary sector plays a vital role in advocating and protecting the rights of people with disabilities during conflict (Hadley et al., 1981). In addition, judicial decisions and legislative developments have been adopted to guide future policy initiatives (Liebman, 1976). Despite these efforts, more must be done to ensure the safety of people with disabilities during war (Titterton, 2006). For example, there is a need to raise awareness about the rights of people with disabilities and strategies to prevent violations of these rights (Blau et al., 2003). In addition, mechanisms are needed to protect the rights of people with disabilities even after the end of the conflict (Deacon, 2013). Ultimately, it is essential to focus on protecting the rights and welfare of people with disabilities during the war (Mendes, 2017). Such initiatives should be comprehensive and include early intervention, prevention, and individualised treatment (Hadley et al., 1981; Titterton, 2006). This will help ensure that people with disabilities have access to social protection during and after conflict (Eckert, 2004).

3.6. The role of CSR practices in forming the cohesion of territorial communities in the conditions of war: European integration aspect

With the beginning of the full-scale war of Russia against Ukraine, there arose significant social, economic, and environmental problems that require not only research but also significant financial resources for their elimination. Ukrainian business managed to unite and confirm its commitment to the implementation of the goals of Sustainable Development in the conditions of war according to the principles of "Zero hunger", "No poverty", and "Good health and well-being", at the same time, focusing on helping the community.

As of 2021, according to the sustainable development index conducted by the UN and the Bertelsmann Foundation, Ukraine ranked 36th among 165 countries, ahead of Israel (38th place), Luxembourg (42nd place), Bulgaria (45th place), China (57th place). By implementing the Sustainable Development Goals, Ukraine creates the basis for the development of corporate social responsibility (CSR) and forms appropriate communication channels at various levels both in peacetime and in wartime.

Despite the difficult periods in its history, Ukraine ranked 19th in terms of influence and 37th overall in the Global Soft Power Index ranking conducted by Brand Finance and presented at the Global Soft Power Summit 2023. This index shows a country's ability to influence the world order through persuasion and the country's reputation, rather than force and coercion. Therefore, in the rating of influence, Ukraine took 14th place (in 2021, 47th place).

However, the ongoing war is causing massive damage and destruction daily, with infrastructure and housing destroyed, and many industrial facilities and private businesses suspended or completely ruined.

Analyzing the data presented by Kyiv School of Economics (KSE Institute) in the "Report on direct damage to infrastructure from destruction as a result of Russia's military aggression against Ukraine", as of December 2022, Ukraine suffered losses in the amount of 137.8 billion US dollars. Direct expenses of the economy, unfortunately, are growing every month. For example, as of March, they amounted to 54.3 billion US dollars, and 113.5 billion US dollars in August. The calculations of the specified losses were made in accordance with the methodology of the World Bank, taking

into account official data provided by relevant authorities and civil-military administrations (Fig. 3.13).

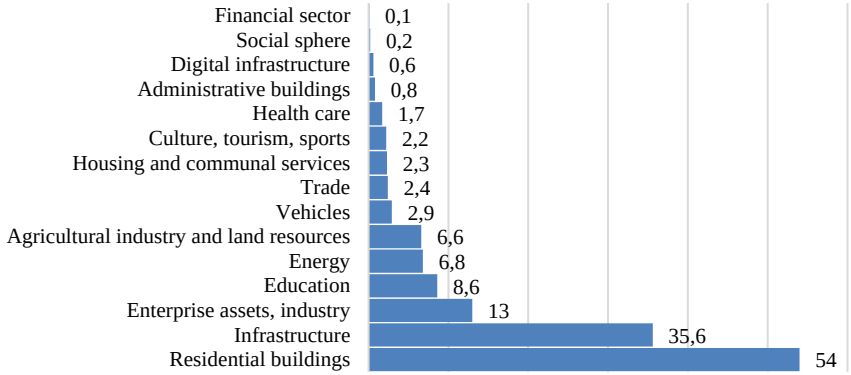

Figure 3.13 – The total amount of Ukraine's direct losses as a result of the war, December 2022 (billion $)
Source: KSE Report, 2022

The biggest losses occurred because of the destruction of the housing stock, infrastructure facilities, and educational institutions. It should be noted that the losses of the energy infrastructure are much greater (in the picture provided, experts present the information from open sources). As far as environmental damages are concerned during the analyzed period, they amount to about 14 billion US dollars and are calculated as losses from emissions into the air, and not as direct losses.

However, despite heavy economic losses, there are also human losses. This is what has determined the need for the grouping of socially responsible economic entities in the fight against the Russian aggressors and the restoration of the community. That is, CSR has gained special importance in the consolidation of Ukrainian business and its reorientation in terms of charity aid. This reorientation is presented by the Center "Development of CSR in Ukraine" in the form of "A catalogue of business contributions to the victory of Ukraine". The catalog includes more than 300 companies that have made a significant contribution at the national and regional levels.

It should be noted that the understanding of CSR processes in Ukraine has changed significantly as a result of the war. According to the

data presented by the experts of Factum Group the share of Ukrainian enterprises that implement CSR strategies in war conditions and have restructured their own one is, for example, in the field of communications (46%), food industry (38 %), logistics and supply (34%), banking and financial spheres (32%), IT sector companies (28%), light industry (25%), hotel and restaurant business, agricultural sector (23% each), energy, housing and communal services (22%), online trade and online platforms (20%), offline trade (18%). It can be confirmed that domestic enterprises consider CSR as a strategy of socially oriented business with the observance of socially responsible business behavior that strengthens consumer trust and reduces risks.

CSR strategies have become the tools that will contribute to the restoration of civil and critical infrastructure that have suffered. The effectiveness of the implementation of these strategies will depend on the established goals and understanding of their implementation mechanisms through the prism of cooperation with local and the world community. Such cooperation should take into account the Sustainable Development Goals, which are presented in the "Final Document of the Summit "Transforming our World: Agenda for Sustainable Development by 2030. This document presents 17 Sustainable Development Goals and 168 tasks, which are indivisible and ensure the balance of three dimensions of society's sustainable development - ecological, social, and economic. For example (Fig. 3.14), 12 Sustainable Development Goals were selected by domestic agricultural holdings and are being successfully implemented.

Based on the results of the analysis, it was found that 12 agricultural companies chose the 17th goal - Partnership for sustainable development and the 3rd goal - Good health and well-being. In addition, 11 companies chose 15th goal - Protection of terrestrial ecosystems and 8th goal - Decent work and economic growth. Such a choice represents the desire of agricultural holdings to preserve the environment, as well as take care of the workers' and consumers' welfare, that is, to unite the community, and also emphasizes agricultural companies' understanding of the processes taking place in Ukraine, in general, and military actions, in particular. For example, the agricultural holding "IMK" has developed programs for professional training of employees and a healthy lifestyle, organizing systematic professional medical examinations for its employees and conducting relevant training (IMK, 2022).

The 8th goal - Decent work and economic growth was also chosen by the MHP company, which, after attracting investors, created the Leaders

Hub and promotes the development of its own personnel. In addition, considerable attention is paid to attracting talented students (MHP company, 2023).

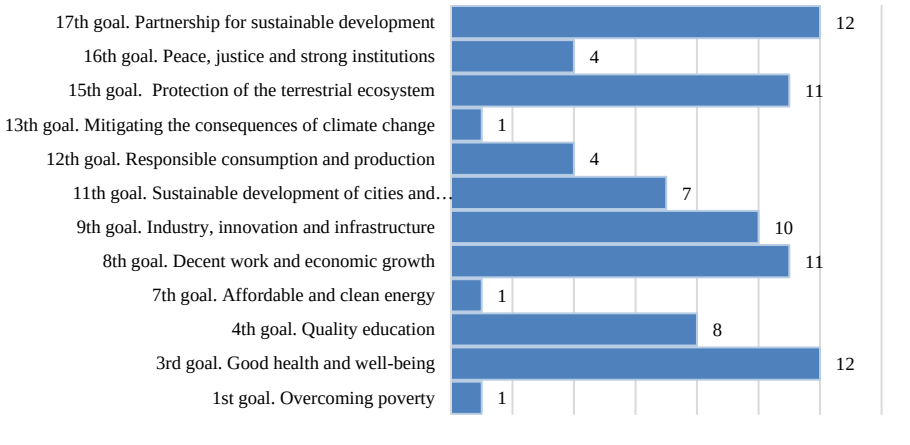

Figure 3.14 – Distribution of domestic Ukrainian agricultural holdings according to the Sustainable Development Goals
Source: Created by the authors using the sources

Harv East Holding company successfully implements the 15th goal - Protection of terrestrial ecosystems and is aimed at preserving soil fertility, effective waste management, and the development of energy efficiency projects (Harv East Holding, 2023) .

The 9th goal – Industry, innovation, and infrastructure was chosen by the Agrotrade Group, which develops the infrastructure of local communities through the improvement of territories (the program "Spring landscaping for communities"), support of schools (the program "New canteen for children"), road repair, restoration of street lighting (the program "Rusanivka has now the light"), etc. (Agrotrade group, 2023).

The 17th goal - Partnership for sustainable development is successfully implemented in selected communities within the framework of the "Plan of interaction with stakeholders of the agricultural holding "Astarta-Kyiv". It can be asserted that domestic agricultural holdings consider CSR as a part of corporate strategy. However, the full-scale war in Ukraine made significant adjustments to the activities of not only domestic agricultural holdings but also the entire country. Many communities

suffered great losses as a result of Russian aggression (Fig. 3.15). Therefore, in a view of the mentioned events, agricultural holdings should participate as much as possible in the targeted solution of community problems, for example, in the de-occupied territories of Kyiv region, which are on the verge of a humanitarian disaster.

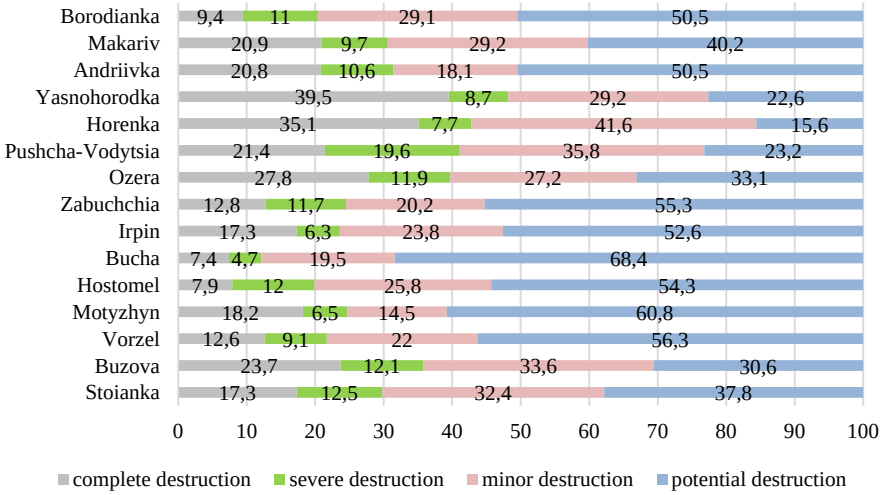

Figure 3.15 – Levels of structures destruction in the communities of Kyiv region, (in % of the total number)
Created by the authors using the sources

When constructing the picture, the destruction calculation methodology was used, which was created within the framework of the RebuildUA project and aims to digitize, visualize and analyze the destruction of Ukraine's infrastructure. The experts formed orthophoto plans using drones for filming, as well as data provided by satellites (Analytical reports, 2023). Based on orthophoto plans, specialists digitize all buildings, analyze geospatial data, recognize destroyed objects and determine the degree of their destruction:

- complete destruction: the original structure of the building is no longer distinguishable, restoration is impossible (destruction of more than 50%; collapse of part of the building to the foundation);

- severe destruction: significant visible damage to the building and its structure (collapse of the roof; destruction and walls damage);

- minor destruction: minor/partial damage to the building and its structure (minor damage to the roof; chimney collapsed; facade elements damaged; the presence of a large amount of debris);

- potential destruction: the interpretation of the damage is complicated due to the low quality of the image.

The obtained results are presented in the form of analytical infographic reports.

Consider the populated areas of Kyiv region (Analytical reports, 2023) (all photos are taken from the open access on the Internet). Borodianka (58 km to Kyiv) – there was no military unit or strategic object in the area, however, administrative infrastructure buildings and housing stock, road pavement, etc. were destroyed.

Makariv (58 km to Kyiv) – in a village that was randomly shelled by Russian criminals, a fire station, a hospital, a school, and kindergartens were destroyed. The criminals left behind more than a thousand explosive items (Analytical reports, 2023).

Andriivka (61 km to Kyiv) is a village on the way to the Belarusian border, which was called "Little Mariupol", was under occupation for the longest time. Even buildings with "Children" and "People" written on their gates were bombed. A settlement that was practically eradicated from the face of the Earth.

Yasnohorodka (42 km to Kyiv) was known for its eco-park and ostrich farm before the war. As a result of enemy attacks, the area suffered not only numerous destructions of private and industrial buildings, and churches but also many animals died, which became live targets for the invaders.

Horenka (32 km to Kyiv) is the only village that could be reached by tram from the capital before the war. It was located a kilometer

zone away from the front and the occupiers shelled it purposefully using the "Grad" causing all the inhabitants to have no electricity, gas, and water. Pushcha-Vodytsia (24 km to Kyiv) is a settlement located close to Hostomel and Irpin. Sanatoriums, a fire station, and private houses were destroyed there. Mined forests continue to be the biggest problem.

Ozera (28 km to Kyiv) is a small village that used to have a considerable industrial capacity (fish farming, production of biofertilizers, ceramic blocks, boilers) and developed social infrastructure before the beginning of the war. During the occupation, the occupiers actively built earthen ramparts around their equipment and destroyed the infrastructure.

Zabuchchia (32 km to Kyiv) was completely occupied. Private houses were systematically shelled with various types of weapons, preventing residents from going outside. So the village was on the verge of a humanitarian disaster. During the retreat, the invaders destroyed everything on their way (Analytical reports, 2023)..

Irpin (26 km to Kyiv) is a cozy town that used to be known for its educational institutions, parks, squares, alleys, and a large number of enterprises before the war, gained "popularity" due to the brutal crimes of the Russian occupiers during the occupation. The city needs significant resources for reconstruction.

Bucha (33 km to Kyiv) is a notorious city that had been under occupation for more than a month and used to be considered one of the best places to live in the region before the war due to the large number of parks. The fighting continued unceasingly. The number of victims among the population is very high, which is why people were buried right in the yards of private buildings.

Hostomel (32 km to Kyiv) became a key target for the occupiers on their way to the capital. There were fierce battles for

the local airport. Human losses and the AN-225 "Mriia" plane destroyed by the occupiers should be included among the biggest losses.

Motyzhyn (50 km to Kyiv) is a village where Russian troops entered on the third day of the war. As a result of the shelling, the local infrastructure suffered significant losses, and the private dendrological park "Dobropark" was looted and destroyed. There are many facts about the abuse and murder of people.

Vorzel (35 km to Kyiv) is an urban-type village where more than three thousand people did not have time to evacuate, as the occupiers seized it from the side of Bucha and set up headquarters in a psychoneurological hospital. The infrastructure of the village was significantly damaged.

Buzova (36 km to Kyiv) is a settlement on the highway to Zhytomyr, where the occupiers received strong resistance from the Armed Forces. Russian invaders struck a maternity hospital and a school with women and children inside the bomb shelters.

Stoianka (22 km to Kyiv) – the notorious Kyiv-Zhytomyr highway passes through the village, where enemy vehicles were moving along leaving behind burned civilian cars, a blown-up bridge, destroyed residential and industrial buildings, and debris from rocket attacks (Analytical reports, 2023)..

In general, after analyzing the settlements of Kyiv region that suffered the most as a result of the Russian occupiers' actions, it was established that on average the number of completely destroyed buildings is 19.5%, 10.3% of severely destroyed, 26.8%, of minor destruction and 43.5% of potentially destroyed.

The question of restoring the affected settlements, eliminating the humanitarian problem, and restoring the whole life of its inhabitants becomes obvious. According to the estimates of the vice-president of the World Bank, Anna Bjerde, by the end of 2022 8 million Ukrainians will

live below the poverty line. Whereas by the end of 2023, the UN predicts that, the poverty level may increase to 55% of the entire population of Ukraine. Therefore, the primary Global Goal in Ukraine is the 1st Goal – overcoming poverty through the creation of CSR practices.

In our opinion, to implement CSR practices, there is a need to combine analytical infographic reports with ESG data.

ESG data (Environmental, social, governance) is the company's efforts in key areas (environment, social, governance) for the purpose of sustainable development. ESG data, for example, is taken into account by financial institutions and investors when making decisions on granting loans and investments, as well as by suppliers and counterparties in the process of conducting commercial activities. ESG data are considered to be ESG tools of financial institutions within the Ukrainian Agribusiness Sustainability Webinar Series as a joint initiative of the Netherlands Development Bank, the Association of Sustainable Development Experts, FMO, and the first international association of sustainability practitioners. This is the trend that began to develop actively during the period of Covid-19 is gaining momentum in the field of responsible investing and involves considering environmental (the company's impact on the environment), social (building internal communication in the team and external communication with the community), and management (the ability of management to adapt to external influences) indicators of activity. ESG indicators will not only show the development trajectories of companies but will also contribute to minimizing risks and improving the image, building trust in the investment object.

ESG data will help foreign investors choose a Ukrainian enterprise that creates a CSR project, for example, for a particular community, but it lacks its own funds. That is, after studying the previous experience of investment implementation by a separate enterprise on the basis of the received ESG data (their sustainability and ethical impact on the company), the investor will have the opportunity to make a decision on cooperation in the targeted CSR project and prevent risks. To prevent risks, it is necessary to identify the priority needs of the community, taking into account the interests of the company that will implement the CSR program; find common goals; outline the formats of cooperation with the community, authorities, and non-governmental organizations (for example, implementation of programs within the enterprise); provide reports. This approach will help domestic enterprises to expand access to investment

resources and gain international experience in the implementation of CSR practices.

According to the social responsibility standard ISO 26000, any company must consider itself part of the community and society, understand the diversity of the community (cultural, gender, and historical)**.** Because of this, the practice of involving enterprises in the problems of the local community is widespread, which will be especially important during the reconstruction of Ukraine.

CSR should provide for project activities on transparent budgets, form a triad of "business-community-government" using various tools (sponsorship, patronage, etc.) to achieve Global Goals, moving from chaotic unplanned financing of community needs to a strategic understanding of investing in social programs with the aim of receiving the economic and social effect. Such actions are fixed by CSR programs between the company and the community, as a result of which it is expected to strengthen the competitive positions of agricultural holdings in the selected segment due to the social activity of business in community affairs (corporate community involvement). With such an approach, one should not forget about the financial institutions of public lending (social development funds, credit unions, banks, etc.) that would support CSR initiatives and contribute to the strengthening of the social infrastructure of the regions.

In turn, communities will also benefit from cooperation with business structures. In particular, communities will be able to mobilize internal financial resources to solve social problems, establish communication between companies ready to implement the CSR program, local authorities, and non-commercial public structures, control the receipt of funds for the reconstruction of the community, unite the community and form a sense of belonging to the solution of social problems, to gain historical and cultural experience of community formation, and to increase the level of social activity of citizens, etc.

Therefore, in the post-war period, it is necessary to focus on the reconstruction of the community in combination with CSR initiatives and to set real activities in the chosen direction, for example, for agricultural holdings to contribute to the achievement of the 1st Global Goal - Overcoming poverty in affected communities while simultaneously implementing the world experience in building CSR.

There are three of the most popular CSR models in the world - American, European, and Asian, which depend on the country's geographic

location, its historical, cultural, economic, and environmental development, the mentality of citizens, and the level of corporate and financial influence.

The Asian model of CSR is characterized by the active role of the state in combination with the traditions of the population, which are discussed at annual events for the development of CSR initiatives that will preserve the cultural traditions of the country, promote volunteerism, and ensure gender equality and conscientious partnership. All activities are based on internal corporate directives.

The American model provides the maximum independence of corporations in determining the social contribution, as well as their legislative encouragement in the form of tax benefits, while the influence of the state on the decision-making on the CSR initiative is minimal. This model gravitates toward philanthropy; is aimed at the protection of consumer rights and decent remuneration; minimizes the connection of the business entity with social projects; the company decides on the degree of solving a social problem independently. For example, PC "Ukrsotsbank", which represents UniCredit Bank, implements CSR programs in various areas (orphanages, cooperation with theaters, support of sports events, etc.) and considers them as sponsorship and philanthropic activities provided by local authorities, public organizations, and community with mandatory control over their implementation.

The British model can be called the transitional model between the American and European ones, which significantly involves the state and public institutions in the process of solving public interests, deepens CSR initiatives through systematic coverage in the mass media (for example, the newspaper "Times" in the "Company Profile" section publishes CSR indices every week), supports the development of the independent consulting sector, popularizes the system of business education in the field of CSR, creates a government partnership with private structures, co-finances projects, promotes tax benefits, etc.

The European model of CSR is aimed at the standardization of CSR initiatives where the role of the state is important and, accordingly, such activities are regulated by laws, standards, and norms. However, the CSR initiative in accordance with the EU policy is voluntary and largely focused on such areas as economic, environmental protection, and employment. Therefore, when implementing the European model in Ukraine, it is necessary to pay more attention to such areas as ethical behavior; protection of social and labor rights of employees; consumer rights protection; use of energy-saving and eco-friendly technologies; compliance

with safety standards; compliance with the principles of recycling; improvement of community life with wide media coverage of the obtained results.

In our opinion, to form the cohesion of territorial communities, it is most appropriate to use the European model of CSR practices, focusing on the training of employees and their systematic improvement of qualifications, and the formation of a personnel reserve. With their support, European states show their commitment to long-term cooperation by providing humanitarian aid to Ukrainians, supporting medical facilities, evacuating people from war zones, and placing displaced persons to safe locations. This is just a small part of what the international community is doing for Ukraine while demonstrating the methods of implementing Sustainable Development Goals and humanitarian values.

However, the post-war period cannot do without the state support. Therefore, the development of CSR programs at the state level in combination with analytical infographic reports and ESG data will contribute to the reconstruction of Ukraine and its integration into the EU environment. The motivation of private business by the state is no less important. Therefore, the provision of tax benefits based on the results of the implementation of CSR initiatives can become a significant impetus for the domestic business environment in solving urgent community problems, and will contribute to the formation of a socially responsible society.

3.6. The role of the teacher in forming a healthy lifestyle in future doctors in the conditions of war

In recent years, morbidity and mortality rates among the population have increased in Ukraine. The fact that the specific weight of chronic forms of diseases has increased is particularly worrying.

Many researchers associate this trend with the growing public distrust of both doctors and medicine in general. Since one of the stages of specialist training is studying at a university, the importance of a teacher in the formation of healthy lifestyle skills becomes clear.

According to recent studies (Boyko, Bobrova, 2015) it is known that future specialists have a sufficiently low level of awareness of health as a

value, the importance of maintaining a healthy lifestyle, motivation to preserve one's health and lead an active healthy lifestyle .

In addition, there is a large percentage of the spread of bad habits (eating fast food, smoking, alcohol abuse, etc.) among young people, and they are also the most vulnerable to the negative impact of advertising (Stonerock, Blumenthal, 2017).

In this regard, it is extremely important to work with young people to create conditions for the formation of healthy lifestyle skills. To achieve this goal, it is necessary to implement pedagogical conditions. In this context, it is important to understand that pedagogical conditions, according to (Sivokhop, 2010), are factors that ensure the effectiveness of the educational process, which in turn are divided into organizational-pedagogical and personal-oriented. Pedagogical conditions, according to the definition of scientists in the context of training a future specialist, are an integral part of the formation of health care activities as an interrelationship of factors that affect the effectiveness and quality of the educational process and, as a whole, make up the most optimal environment for the students' assimilation of valeological knowledge, abilities and skills, as well as the experience of health care activities based on the formed personal value attitude to health. Also, based on the opinion of (Bruchanova, 2016), who claims that pedagogical conditions can be considered as circumstances that influence the formation of a culture of responsible attitude to health as a worldview orientation and taking into account which is necessary to increase the effectiveness of this process.

In addition, for the formation of healthy lifestyle skills, it is extremely necessary for teachers to explain to students the integrity of this concept (i.e., that the observance of only one component does not mean that a person's lifestyle is healthy).

Equally important is the awareness of the essence of a healthy lifestyle, as purposeful actions aimed at preserving health. It has been proven that a healthy lifestyle includes a rational diet, maintaining optimal physical activity, control of bad habits and avoiding stress. Therefore, the teacher's work on forming motivation to follow a healthy lifestyle is extremely important, since this goal can be achieved by example and educational work.

The purpose of this study was to determine the teacher's influence on the formation of motivation to maintain a healthy lifestyle during wartime.

To achieve the established purpose of the study, a survey was conducted among students of Kharkiv National Medical University (38

students), medical faculty of V. N. Karazin Kharkiv National University (35 students) and I. Ya. Horbachevsky Ternopil National Medical University (29 respondents). In total, 102 respondents aged 17 to 22 were interviewed, of whom 58 were girls and 44 were boys.

In order to conduct the survey, standardized questionnaires were developed “under the following requirements: to take into account the objectives of the survey and the specificity of the contingent of respondents; to use a simple questionnaire structure (preamble, general information about the respondent, characteristics of his health, clarification questions); to maintain the interest in the survey by compliance with the requirements for the number (in our case, 20 questions) and the quality of the proposed questions (clear, concise, correct and understandable), which can ultimately allow respondents not to spend too much time filling out the questionnaire; to avoid direct questions where possible; to take into account the subjectivity of respondents' answers, and in part, their secrecy by using “filter questions” that help to reveal the reliability of assessments; if possible, to offer to choose a single answer option that reflects (Hlon, 2019) (if necessary, their ascending or descending hierarchy) possible changes in the parameters of the studied quantities (results, phenomena, processes)”(Melnichenko, 2018). The questionnaire consists of the following blocks. The block “General information about the respondent” consists not only of the basic demographic data about the respondents, but also of the most important (taking into account the specifics of this study) characteristics of the conditions and way of their life and education; thus, a baseline is formed for the further identification of cause-and-effect relationships between the respondent's personality and the teacher's influence on the healthy lifestyle skills of the student (Lytvinenko, 2013). The block “Characteristics of health” is used to get the subjective opinion of respondents about their health; however, it is not always related to adherence/non-adherence to healthy lifestyle. The block “Questions for clarification” should help refute/confirm existing doubts about the correctness of the answers in the previous block.

After the content of the questionnaire was approved, its Google form was created, using which the survey is conducted. At the same time, the following requirements were met: specification of the contingent of respondents (for example, students); the list of higher education institutions whose students became respondents was specified; the conducted survey is anonymous and voluntary; guaranteeing full confidentiality of respondents' personal data and explaining the degree of responsibility of researchers for

failure to fulfill this requirement; the obligation to explain to the respondents who is conducting the survey and for what purpose; giving respondents the opportunity to take the survey in a way and time convenient for them; avoiding any influence on the respondent's choice; rational use of available resources.

In addition, the respondents were asked to additionally describe their experience of maintaining a healthy lifestyle and to explain what role the teacher played in this (introduced the basics of valeology, prohibited the use of harmful products during breaks, promoted a healthy lifestyle) (Nesterov et al., 2016).

When analyzing the received survey data, the following data were obtained: 49% rated their lifestyle as unhealthy, 33% rated it as a healthy lifestyle, and 18% could not decide on the answer.

Analyzing the data by universities, the following picture was obtained: the largest percentage among those who followed a healthy lifestyle was observed among students of KhNMU, and the smallest among respondents of I.Ya. Horbachevsky TNMU.

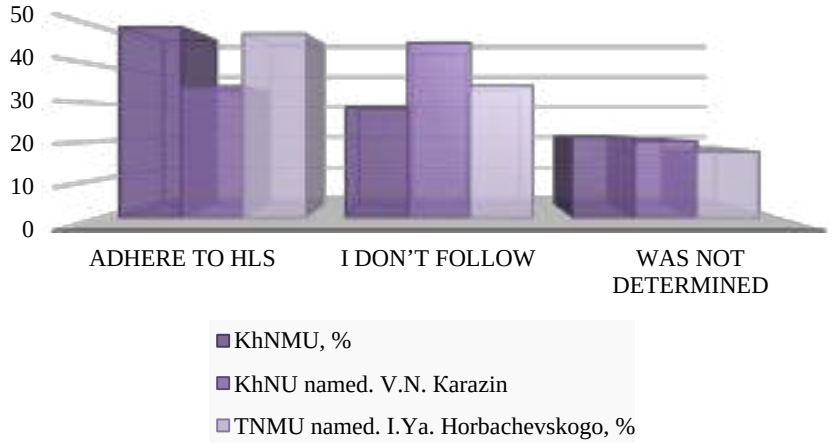

Figure 3.16 – Self-assessment of their lifestyle by students of medical universities

Among those who defined their lifestyle as unhealthy, a higher percentage of respondents' answers was noted among students of V.N. Karazin KhNU, and the smallest among the respondents of the KhNMU.

And among those who did not decide on the answer at all, almost the same percentage was among the students of KhNMU and V.N. Karazin KhNU and the smallest among the respondents of I.Ya. Horbachevsky TNMU.

An analysis of the answers to questions about how the respondents generally assess their health during the war showed the following picture: 63% of the respondents indicated that they assessed their health as unsatisfactory; 22% were rated as satisfactory and another 15% were rated as excellent.

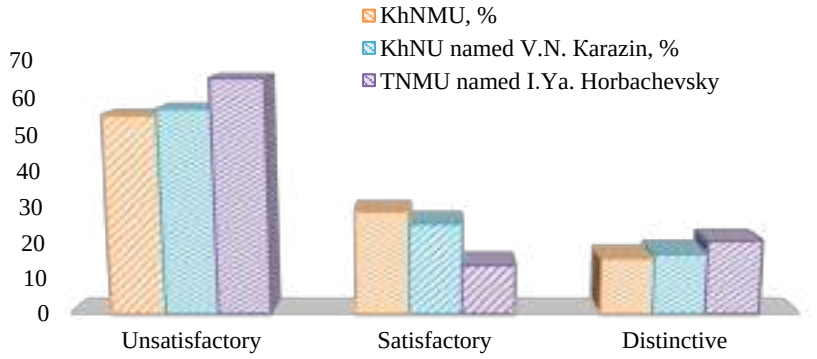

Figure 3.17 –Self-assessment of the state of health during the war by students of medical universities

Thus, among the respondents who rated their health condition as unsatisfactory, the majority belonged to the students of I.Ya. Horbachevsky TNMU, the graduates of KhNMU assessed the state of their health as satisfactory; the lowest percentage was noted among the respondents of I.Ya. Horbachevsky TNMU, among those who marked their own health as excellent, the highest number was among representatives of I.Ya. Horbachevsky TNMU.

When studying the factors that resulted in the acquisition of bad habits, the leading place was occupied by psycho-emotional stress during the war (29% of cases), followed by loss of work (18%), loss of property (16%), death of a loved one (14%), insufficient promotion of healthy lifestyle (10%), forced relocation to another country (8%) and conflicts in the family related to the war on the territory of our country (5%).

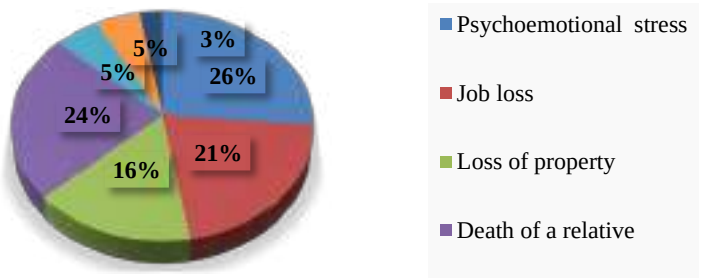

Figure 3.18 –Reasons resulting in the acquisition of bad habits by medical students during the war.

When analyzing the distribution of responses of respondents from different institutions of higher education, the following data were obtained: Psychoemotional stress played a predominant role in respondents from I.Ya. Horbachevsky TNMU (31.03%) and KhNMU (26.32%); loss of work among students of KhNMU (21.05%) and V. N. Karazin KhNU (17.14%); loss of property of the respondents of V.N. Karazin KhNU (22.86%) and I.Ya. Horbachevsky TNMU (17.24%); the death of a loved one among students of KhNMU (23.68%) and V. N. Karazin KhNU (14.29%); insufficient promotion of a healthy lifestyle in the institution of higher education among students of I.Ya. Horbachevsky TNMU (6.9%) and KhNMU (5.26%); forced relocation to another country among respondents from I.Ya. Horbachevsky TNMU (17.24%) and V. N. Karazin KhNU (5.71%); conflicts in the family caused by the war among students of V.N. Karazin KhNU (11.43%) and I.Ya. Horbachevsky TNMU (3.46%).

When researching the factors that prompted the transition to a healthy lifestyle during the war, the following data were obtained: worry about the state of one's own health in 41% of cases, teacher's advice in 36% of respondents; close location of sports grounds in 21% of respondents, a desire to get rid of excess weight in 2%.

Analyzing the distribution of answers to the questions about the factors that prompted respondents from different institutions of higher education to adopt healthy lifestyle, the following data were obtained: the most significant influence was attributed to the close location of the sports infrastructure to the place of residence, especially among students from KhNMU (42.10%) and V. N. Karazin KhNU (34.29%); in second place was anxiety about the state of one's own health among respondents from

KhNMU, namely in 31.58% of cases and V. N. Karazin KhNU – in 28.57% of cases; the teacher's advice played a decisive role for the respondents from KhNMU in 23.68% of cases and V.N. Karazin KhNU in 20% of respondents; a desire to get rid of excess weight was the predominant factor among students of I.Ya. Horbachevsky TNMU – in 27.59% of cases and V.N. Karazin KhNU –17.14% of the surveyed respondents.

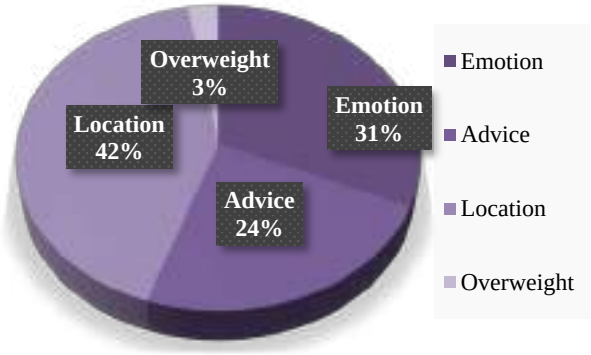

Figure 3.19 – Factors that prompted the transition to a healthy lifestyle of students during the war.

Analysis of respondents' answers to the question “Does the institution of higher education where you study promote a healthy lifestyle?” yielded the following data: 76% of all surveyed respondents chose the option “yes” and 24% chose “no”.

Thus, it was found that the most intensive promotion of a healthy lifestyle was among students of I.Ya. Horbachevsky TNMU (88% of respondents) and V.N. Karazin KhNU (82% of respondents).

Analyzing the answers to the question about how health education is carried out, the following answers were received: holding round tables – 48% of all surveyed respondents; conducting sports and health activities – 19%; conducting scientific and practical conferences dedicated to the study of the principles of a healthy lifestyle – 16%; introduction of the discipline “Valeology” into the curriculum – 9%; conducting other educational activities with the aim of forming a value-oriented approach to a healthy lifestyle – 8%.

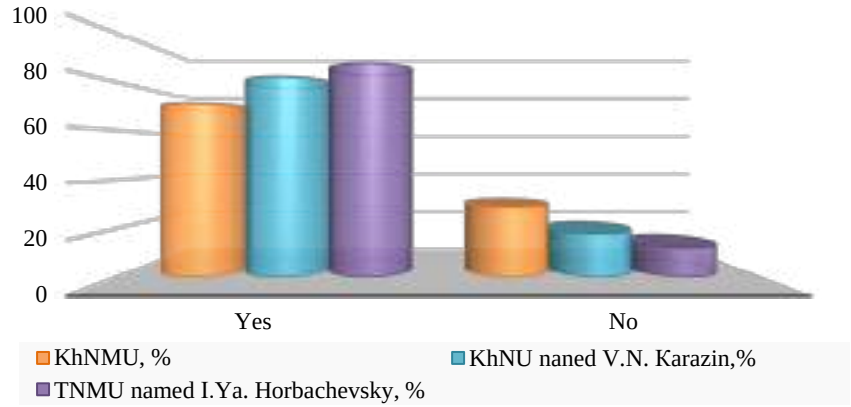

Figure 3.20 –Promotion of a healthy lifestyle in higher education institutions during the war

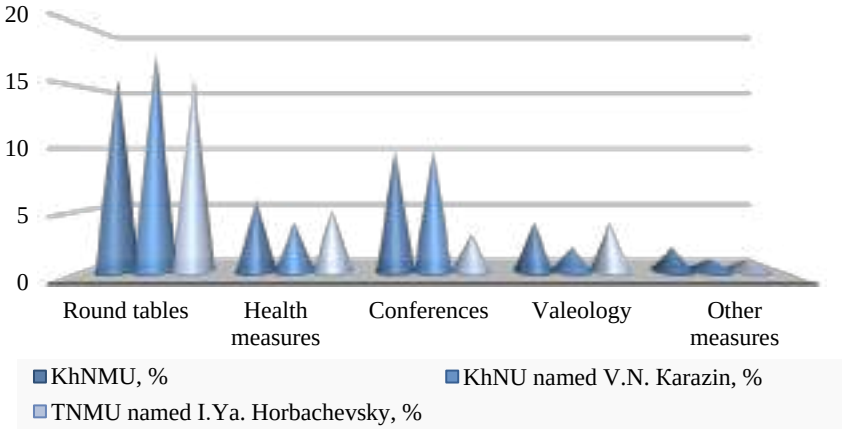

Figure 3.21 –Measures aimed at promoting a healthy lifestyle in higher medical education institutions during the war.

Thus, round tables were most often held at V.N. Karazin KhNU (mentioned by 17.65% of surveyed respondents); conducting sports and recreation events at KhNMU (5.88% of respondents); scientific and practical conferences devoted to the study of the principles of a healthy

lifestyle among students of KhNMU and V.N. Karazina KhNU (the same number of respondents - 9.8% of respondents); introduction of the discipline “Valeology” into the curriculum for students of KhNMU and I.Ya. Horbachevsky TNMU (the same number of respondents – 3.92%) and other educational measures among KhNMU students (1.96% of respondents).

When analyzing the responses regarding the effectiveness of the measures, the following picture was obtained (Fig. 3.22):

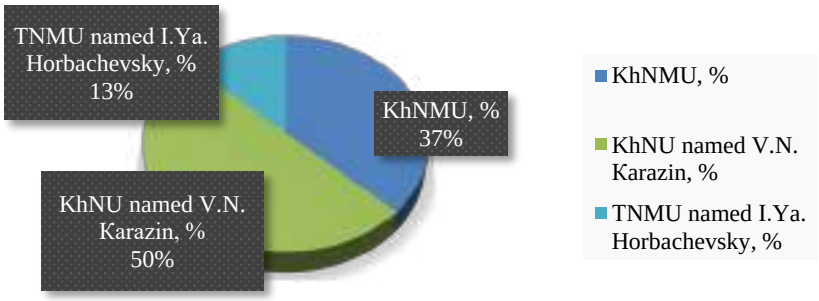

Figure 3.22 – Respondents' general assessment of the effectiveness of measures to promote a healthy lifestyle.

It can be seen from the figure that most of the interviewed respondents are students of V.N. Karazin KhNU considered the above-mentioned measures to be effective (50% of those surveyed), while the students of I.Ya. Horbachevsky TNMU considered them insufficiently effective. In addition, respondents were asked to independently determine the degree of influence of the environment on maintaining a healthy lifestyle: their own personality, parents, friends, dean's office, teacher (Fig. 23).

For the most part, students defined the role of their own personality, teachers and the dean's office in maintaining a healthy lifestyle. This indicates an improvement in the situation regarding the effectiveness of measures to promote a healthy lifestyle among young people in institutions of higher education.

After analyzing students' answers about the teacher's role in the formation of a healthy lifestyle, the majority noted that the teachers conducted explanatory work by visually demonstrating the positive impact of such a lifestyle, highlighting the negative role of bad habits and the

consequences of their influence. Also, role-playing games were used to form healthy lifestyle skills and discussion clubs about healthy nutrition, support of student self-government in conducting activities to popularize sports (holding sports games, sports days, etc.).

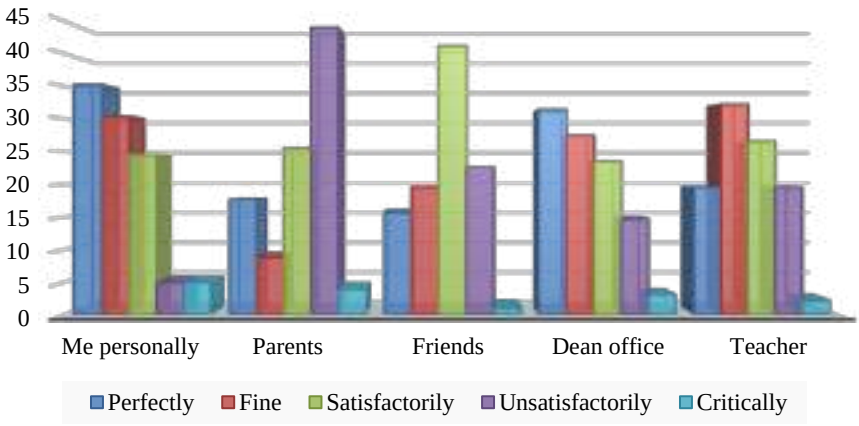

Figure 3.23 – Determining the degree of influence of the environment on maintaining a healthy lifestyle by students during the war.

This study complements already existing works and expands general ideas about the extent of the teacher's influence on the formation of students' motivation to follow a healthy lifestyle (Amini et al., 2023). The leading way in which this was carried out was the support of student projects and research to determine the degree of influence of each of the components of a healthy lifestyle on the human body.

At the same time, a whole list of issues remains unresolved, the main of which is the creation of an appropriate legislative framework that would regulate ensuring the formation of healthy lifestyle skills among the population, the absence of a state policy on ensuring healthy living conditions and student education, and the lack of systematic work on the formation of a healthy lifestyle (Sankova, Nikolenko et al., 2023). In addition, the lack of regular positive social advertising and the absence of a healthy lifestyle in the information space, as well as the underdevelopment of the system of returning to a healthy lifestyle, in particular discrimination and stigmatization of certain target groups of students who lead an unhealthy lifestyle (Serra, Dondero et al., 2020), are clearly visible.

Assessment of recent studies showed that the implementation of a comprehensive approach to solving the specified problems is required, which includes not only the adoption of management decisions by the state, the administration of higher education institutions, but also the implementation of practical measures with the aim of forming a healthy nation (Vaughan, Ghosh-Dastidar et al., 2018). All this should create prerequisites for further awareness (Hohberg, Fuchs et al., 2022) of one's own responsibility for one's health and a health-preserving approach to it in society (Gerber, Beck et al., 2019), and the search for new ways of developing the health care system as a whole (Cody, Beck et al., 2023).

Based on the obtained research data, it can be concluded that it is extremely important to work with the population starting from a young age for the formation of healthy lifestyle skills, regular educational work among students of higher education, visual demonstration by teachers of its benefits and highlighting with examples of harm to body from harmful habits (drug addiction, smoking, alcohol abuse). It is also beneficial to help and support in the transition to a healthy lifestyle for those students who did not follow it before. That is why the work of teachers is extremely important, as they should act as mentors who form motivation for the formation of healthy lifestyle skills, which is very important in wartime, as this can fundamentally affect the demographic situation in our country in the future.

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Chapter 4
MANAGEMENT OF THE HEALTH CARE SYSTEM IN UKRAINE AND EU COUNTRIES

4.1. European experience of public management of the health care system

The countries of the European Union have accumulated significant positive experience in health care, which ensures a high average level of life expectancy, low infant mortality, and the development of those directions in the medical field (personalized and gene medicine) that allow achieving such results (Terzi, 2018). Each country strives to create a sustainable national health care system, distinguished by quality and efficiency, a developed system of providing services and financing health care (Kuzmenko, 2022).

International organizations, such as: the United Nations, the World Health Organization, the European Union, the World Bank, the European Bank for Reconstruction and Development, now focus a lot of attention on the indicators of the effectiveness of the mechanisms of public management of the health care system, evaluating them the level of development of different countries as a whole.

The analysis of scientific sources showed that some questions of the study of the international experience of European countries regarding the functioning of mechanisms of public management of the health care system are actualized in the works of many scientists. However, despite the scientific and practical value of the published works, the main issues related to the selection of criteria for assessing the level of development of the EU countries in the health care system remain unresolved (Hudoba, 2014). In general, the management of the health care system is carried out in accordance with the strategic directions outlined by the World Health Organization.

A fundamental component of the development of every state is creating an effective health care system.

The system of public health management mechanisms in Germany is based on well-structured health insurance, consisting of public health insurance and insurance of private funds. About 89% of the population has state insurance; private insurance – 9% of Germans; 2% of the population receive medical care under special state programs (military, police). The actual contribution of state health insurance to the total costs of health care

is more than 60%. In addition, funds come from other components of the state insurance system (from pension insurance funds, occupational injury insurance). Also, money comes from the state treasury. Contributions to the state health insurance are collected by hospital funds (independent self-government bodies). A government agency controls and manages their activities (Parshikova, 2017) .

At the federal level, the health care system is headed by the Federal Ministry of Health and Social Security. It also carries out a general policy on state health insurance (ensures equality, completeness, procedure for providing and financing of social health services). The state-legal regulation of the entire German social insurance system is based on the Social Code, the fifth book regulating state health insurance. The responsibility for planning the work of mechanisms of public management of the health care system rests with 16 federal states. Each land is obliged to guarantee the provision of public health care needs. Germany developed legislation in the field of health care taking into account the specifics of each federal state, their social and economic developments, etc., which leads to significant differences in the nature, limitations and methods of planning medical programs in different regions.

Health insurance is mainly financed (57%) by compulsory state health insurance contributions - it covers 90% of the population, the rest use private insurance or special state programs, for example, military personnel, police officers, recipients of social security, etc. Approximately 11% of contributions come from such components of the state insurance system as pension insurance, insurance against accidents at work; the rest of the funds come from private insurers – 8.4%, and direct personal payments of citizens – 12.2%. Thus, the main source of funding for health care in Germany is self-governing regional and federal hospital funds that collect contributions and finance health care at the level of state social security. All hospitals are non-profit organizations that are required to pay membership fees and have the right to set the dues rate necessary to cover costs.

Among the advantages of the German health care system are high quality of care, modern medical equipment in hospitals, proper qualification of medical workers and, most importantly, availability of medical care for all. The health insurance system provides the population with a wide spectrum free services, including outpatient and inpatient treatment, provision of prescription drugs, provision of medical equipment, payment of travel to a medical institution, etc.

In Great Britain, the main part of the funding comes from the state budget and is distributed vertically from top to bottom. This helps keep treatment costs down. However, the state health care system also has its drawbacks: a tendency toward monopolization, the patient's lack of choice of doctor or hospital.

The insurance system is based on the principles of solidarity. Insurance organizations and insured persons have the ability to control use of insurance funds. Insured persons can also choose doctor and medical institution. Financing of such systems is carried out from three sources:

1. Insurance contributions of entrepreneurs (deduction from income).
2. Insurance contributions of working persons (deduction from wages).
3. Funds from the state budget (Parshikova, 2017).

The main provider of health care services is the National Health Service, which reports to the Department (Ministry) of Health. It provides residents with almost all necessary medical services, inpatient drugs and other medical expenses, free of charge. Payment benefits are provided for socially vulnerable and needy population groups. Thus, citizens under 16 years of age, persons aged 60 years and older, students under 19 years of age, patients with special diseases, military pensioners and war invalids are completely exempt from payments for medicines (Karlash, 2020).

The financial base of the National Health Service is formed from tax revenues - they make up 90% of the health care budget. Every Briton pays for medicine according to their income. The NHS provides free health care based on the needs of the patient, not on the patient's contribution. Note that not all services of the National Health Service are free. Patients pay directly for private treatment in public hospitals, over-the-counter drugs, ophthalmology and dentistry. Dental services and prescription drugs are reimbursed to patients. As for drugs, they have a standard prescription price, regardless of their cost. Funding generated from general tax collections provides 82% of hospital maintenance costs and 100% of the salaries of doctors, nurses and independent practitioners. Other sources of funding for the National Health Service (18%) come in the form of donations, funds from state insurance and commercial activities of agencies.

Medical services in Great Britain are divided into primary, provided in general practice offices, outpatient surgical offices, dental and ophthalmology departments, and secondary – provided in hospitals,

medical centers and carried out by psychologists and psychiatrists. 95% of outpatient medical services in country are provided by independent general practitioners of family medicine, who most often work in a group. The main principle of payment - "the money follows the patient" gives them the right to freely choose a doctor whose fee depends on his work from the number of patients, their gender, age. Referral to a general practitioner who, if necessary, refers to specialists free for the patient. If the patient applies for secondary care on his own initiative, he will have to pay for it himself (except for first aid).

Interestingly, the functioning of the National Health Service in Great Britain does not exclude the operation of private medical institutions, financed by funds from private insurance companies, which cover 8% of the country's population. Recently, the National Health Service increasingly involves private clinics in order to increase its resources.

The UK is one of the leaders in the quality of health care delivery, including efficiency, safety, coordination, organisation, accessibility and overall system performance. The country was able to create a modern medical system industry without intermediaries - insurance companies, which made it one of the most effective among the currently existing ones .

For almost 2 years, France has been ranked first in the field of medicine by the World Health Organization. The main criteria of this rating, which includes 191 countries of the world, are the availability and efficiency of medical services.

In France, the basic level of compulsory health insurance is financed through a system of insurance funds linked to a citizen's place of work. Formally, these funds are private insurance companies, but they are strictly regulated and controlled by the government.

Currently, there are three branches of health insurance in France. The first - the comprehensive national health insurance system - covers 50 million people and provides insurance to 83% of the country's population. This is the majority of workers outside the agricultural sector and members of their families. These contributions cover 60-70% of the total cost of treatment. The second branch is additional, i.e. optional, insurance. Not everyone can afford it. Private insurance in France covers about 12.7% of all healthcare costs. The third branch is more than 118 private insurers that provide various forms of health insurance. Thus, separate insurance schemes cover workers in the agricultural sector and representatives of some other professions - miners, transport workers, artists, priests, public notaries, as well as private entrepreneurs. Another fund specializes in

unemployment insurance. These large insurance structures are divided into smaller funds on a regional basis".

Hospitals in France are divided into public and private, the latter, in turn, into commercial and non-commercial. Thanks to the improved system of health insurance, access to them is ensured to the same extent, and they differ in the range of medical services. For example, all clinical hospitals are public institutions, and longer-term inpatient services are usually provided by private healthcare providers. (Struve, 2015).

In France, there are many large scientific research institutions that treat simultaneously. Almost all hospitals belong to city municipalities and are subject to administrative councils chaired by mayors. In the structure of the French legal system, the laws governing public relations in the field of health care are summarized in the code of laws on health care (Vorobiov, 2011).

France spends 12.21% of GDP on health care (Current health expenditure (World Health Organization, 2020), employees and employers pay contributions to the fund, and the parliament allocates funds for the needs of the medical industry.

In addition to the parliament, the following are involved in the regulation of the medical industry: the Ministry of Health, local authorities and insurance funds. 85% of people working in production and business, as well as the unemployed and pensioners are insured by the Insurance Fund. Family members who do not work are insured for life at the expense of working dependents who financially support them. 7% of low-income residents of the country have additional state insurance (Ukrinform, 2019).

Over time, the French health care system has become one of the best. It was possible to achieve this, mainly due to the successful solution of the following tasks: ensuring general coverage of the population with services, elimination of waiting lists, freedom of choice and satisfaction of all patient needs. The symbiosis of the system of mandatory and voluntary health insurance, which covers the reimbursement of co-payments made within the framework of the state system, as well as the purchase of medicines and the payment of medical services that are not fully covered by the state system, ensured a low level of personal expenses of citizens and a significant demand for medical assistance.

Sweden. Sweden's concept of social security states that the country has developed a policy and strategy and relevant specific programs and projects that contribute to the preservation of the population's health and disease prevention, as well as rehabilitation. There are three levels of

responsibility for health care: national, regional and municipal.

The structures responsible for health care at the national level include: National Institute of Public Health; National Environmental Protection Administration; National Emergency Administration; National road service. The regional level is represented by prefectures (state administration representatives); regional councils (elected bodies, tax collectors). Municipal level (individual communities) – municipal councils (elected bodies, local tax collectors).

In Sweden, several health care delivery systems operate in parallel, which differs depending on the location of the patient and the health care facility. In particular, in the Skåne district, as in some others, there is a basic set of services covering the provision of medicines, visits to primary health care centers and diagnostics (covered by the compulsory health insurance contract). Due to restrictions on the financial support of such programs (basic set of services), additional visits to specialized specialists are carried out at the expense of the patient's additional funds. In addition, insurance systems in all regions of Sweden provide for the payment of fines, or a significant increase in costs for the secondary link of medical care in case of unauthorized, undirected referral to specialists.

In contrast, there are additional financial incentives for patients who regularly visit primary care physicians, perform valeological measures to prevent serious health problems and additional consultations with specialists in complex cases (Priyatelchuk, 2018).

In the process of determining the main tasks facing the sphere of health care, it is important to rationally distribute responsibilities between regional councils and municipal councils (local self-government bodies). Regional councils are responsible for public transport, regional construction planning and health care. Communities are responsible for education, social services and housing.

In the context of the above, Sweden's national health care policy can be considered successful, however, there is an insufficient legislative framework on health care and its protection, although the country has adopted a significant number of laws that indirectly regulate health care issues (Kostenko & Marcinkovskyi, 2018).

We will briefly describe the management system of the medical industry in Spain, which has the best indicators among EU countries. Its political organization consists of a central government and 17 regions (autonomous communities), which have their own governments and parliaments. Recently, autonomous communities have been given authority

and responsibility in the field of health care, which brings health care management closer to citizens and guarantees them equality, quality and participation as users of this system (Rivera, 2011).

The Spanish health care management system consists of three levels: central, regional (district) and municipal. At the central level is the Ministry of Health and Consumer Protection, which approves minimum standards and requirements for the provision of medical care, establishes an information system and ensures interaction between national medical specialists and districts. The Ministry also compiles and publishes comparative medical reports based on the results of its domestic and international activities, conducts research and highlights practical achievements. The Ministry of Health is responsible for the activities of the National Institute of Health, postgraduate medical education (jointly with the Ministry of Education), drug policy, standardization of drugs and other medical products (Dosvid, 2015).

Counties themselves decide how to organize and provide medical care in accordance with current legislation. The municipal level of the health care system takes care of two important issues – hygiene and environmental protection (Deynikhovska, 2008).

The basic territorial structure of health care is medical districts, in which primary and specialized (ambulatory and inpatient) medical care is organized. There are also smaller medical districts that have a primary care center (Dosvid, 2015).

Health care institutions in Spain have considerable autonomy. To obtain it, they must have the appropriate legal status and a professional governing body that is independent and non-politicized.

The decentralization of the health care system in Spain is unchanged, but during the last decade measures have been taken to achieve a balance between decentralization and the public nature of the health care systems (Spain's healthcare).

The health care system in Spain is quite successful. Currently, Spain ranks 8th in the world in terms of the quality of health care. Spain scored 90 points out of a possible 100, taking 8th place in the world ranking, higher than the health care systems of countries such as Italy (89), France (88), Greece (87), Germany (86), Great Britain (85) and Portugal (85) (Spain's healthcare).

At the same time, in recent years in Spain there has been an increase in health care costs, which leads to the aging of the population, obesity and unhealthy lifestyles.

In Denmark , the public authorities set the regulatory framework for health care services and provide general planning and supervision. The overall regulation, planning and supervision of health services, including cost control mechanisms, is carried out at a national level through Parliament, the Ministry of Health, the Danish Health Authority, the Danish Medicines Agency and the Danish Patient Safety Agency.

National bodies are responsible for general supervision of medical personnel, for quality management in accordance with national medical standards, usually in close cooperation with representatives of medical societies. These bodies play an important role in planning the location of specialized medical services, in approving plans for regional hospitals and binding "health contracts" between regions and municipalities to coordinate service delivery.

5 administrative districts, governed by democratically elected councils, are responsible for planning and provision of specialized services, specialized social care and coordination. Each region manages, owns and finances hospitals, and funds most services provided by private general practitioners, specialist doctors and pharmacists. The regions are responsible for the management of hospital services, as well as for the control and payment of general practitioners of family medicine and specialists, may enter into additional regional agreements for the provision of specific medical services, and negotiate with doctors' associations.

Municipalities are responsible for financing and providing care for patients at home. Municipalities also play an important role in disease prevention, population health promotion and long-term patient care (Denmark).

In Finland, two main levels are distinguished in the structure of health care management: central - government and local - municipalities. Also, gubernias – administrative units – participate in the management of health care, and hospital districts (union of municipalities) participate in the management of hospitals. The Ministry of Social Security and Health issues basic laws in the field of health care and monitors their implementation. The Ministry has a Research Center for Health Care and Social Security, a Department of Forensic Medicine and a Medicines Department.

The Finnish health care system is highly decentralized, with the municipalities carrying out most of the administrative functions. There are 20 hospital districts in the country, which are responsible for specialized medical care in their territory. Each municipality belongs to the

corresponding hospital district. Within the hospital district, there is a mechanism of equalization of costs, which consists in the fact that the costs of expensive treatment are distributed among all municipalities of this district.

Municipalities can provide medical services independently, in cooperation with neighboring ones, or purchase these services from private clinics. The organization of medical care in different municipalities in Finland differs significantly, as do health care costs per person (Dosvid, 2015).

In the ranking of the World Trade Organization, Italy's health care system takes 2nd place(The healthcare system in Italy, 2013). The Italian National Health Service (SSN) is a public service with offices in every region and provides free health services to the entire population. SSN is responsible for ensuring the achievement of the main goals and the development of key principles of the functioning of the state health care system. Regional authorities and regional health departments provide state guarantees of free medical care through a network of medical organizations (local medical enterprises – LMP) and accredited hospitals (public and private).

State guarantees of medical care provided under the SSN (LEA) are defined in terms of positive and negative lists. The positive list of services includes services provided by SSN in the entire territory. Regions have the right to provide their residents with additional medical services that are not included in the positive list, but they must finance them with their own funds. The negative list excludes certain categories of medical services from the free list , determined by a number of criteria (for example, due to their proven clinical ineffectiveness). The SSN develops positive and negative drug lists within the National Pharmaceutical Formulary, identifying drugs that are provided free of charge by the SSN and drugs that are paid for by patients.

Employers pay insurance for their employees. If the patient is a citizen of the European Union and visits Italy, he can take advantage of bilateral medical agreements. If he is not an EU citizen and is visiting Italy, he must have private insurance. A large part of Italians choose private insurance instead of public insurance. But treatment in private clinics in Italy is very expensive.

To receive medical assistance, every Italian citizen must register at their place of residence. The future patient immediately chooses a family doctor (primary medical care). In SSN, you can choose a therapist or

pediatrician from a list provided by the local medical association. If he needs to see a specialist, the family doctor will give a referral. The treatment fee must be paid in advance. The state health insurance system provides free visits to many specialists of various profiles.

Family medicine general practitioners and specialists are independent contractors of SSN. They conduct receptions in out-of-hospital units or their own offices, necessarily concluding a contract with a medical association. Each doctor must be a member of the regional branch of the General Medical Council. The General Medical Council monitors compliance with professional ethics and may apply disciplinary sanctions. Medical supplies are the responsibility of local authorities. They are the ones who decide on the necessity and amount of co-payments by patients for medicines. People over the age of 65, children under 6 years old, the disabled and the unemployed are exempt from paying for medicines.

The health care system is mainly funded by earmarked taxation at the central and regional levels, which has led to long-standing disputes between the regions and the central government over health care funding schemes.

Inpatient and primary care would be expensive. Personal payments of citizens are made in two forms. The first form is participation in costs: co-payments of citizens for diagnostic studies, services of narrow specialists and purchase of medicines. The second form is direct payments by citizens for receiving private medical services and purchasing medicines without a prescription. Due to the almost universal coverage of the population, Voluntary Health Insurance (VHI) does not play a significant role in financing the health care system. Public health services are provided by the LMP in the field of disease prevention and formation of a healthy lifestyle, food safety, prevention of occupational diseases and industrial injuries. Specialized outpatient care, including consultations and diagnostics, is provided either by the LMP or by accredited public and private medical institutions that have entered into a contract with the LMP. Currently, inpatient care is provided mainly by state hospitals.

Therefore, an accessible and effective primary health care link, a free choice of a doctor, a guaranteed package of medical services at the level of family medicine, are the standard of quality and modern care in European countries. When determining strategies for the development of national health care systems abroad, indicators of the World Health Organization regarding the effectiveness of the system are taken into account, namely: life expectancy, health care costs and % of GDP, as well as annual changes

in these indicators. It should be noted that European health care systems and models of providing medical services are characterized by: consumer orientation and solidarity –corporatism (state guarantee of a minimum package of medical services, an approved pricing mechanism, state standards for the quality of medical services, a balance between state regulation of the sphere and market mechanisms functioning and financing, decentralization of the management system). We consider the European experience to be relevant from the point of view of forming a strategy for developing health insurance in Ukraine: defining the mission, goals of long-term development and improving the institutional and organizational environment of Ukraine within the framework of international cooperation. The experience of functioning of health care systems of European countries is very useful for Ukraine and can be applied after its adaptation to our realities. This requires strategic planning of developing mechanisms of public management of the healthcare system in Ukraine, including family medicine, taking into account the experience of EU countries and the analysis of the results of its implementation in pilot projects.

4.2. The evolution of national development: from the concept of endogenous growth to a health-oriented economy in the context of the COVID-19 pandemic[2]

Today, Ukraine is the largest country in the European region by area, which includes almost 30,000 settlements, therefore, as a state with a fairly large territory, it faces the problems of uneven development of its regions throughout the entire history of the formation of its economy and social sphere: higher density the population in urbanized areas encourages the development of business there, in contrast to territorial objects with a smaller population. Business development provokes GDP growth in cities at a higher rate than in rural areas. At the same time, the government's task is to balance development with stimulating the reduction of gaps in the quality of life between different settlements and curb migration phenomena from less attractive territories. It is noteworthy that one of the positive features of Ukraine's regional development is the absence of such determinants of interregional differences as the ethnic, religious and

[2] This research was funded by the Ministry of Education and Science of Ukraine, grant numbers 0122U000781, 0122U000778

linguistic composition of the population, which is characteristic of some other large countries of the world. For example, the EU has hundreds of diverse regions that differ significantly from each other in terms of ethnic, religious and linguistic factors. For these reasons, further intensification of efforts in the development and implementation of the strategy of cohesion policy and regional development is an urgent issue in the EU.

Returning to Ukraine, it tended to polarize regional development with the flow of economic resources from the eastern regions to mostly central and western ones (Table 4.1).

Table 4.1 – Share of regions in Ukraine's GDP, % (formed using data (Regions of Ukraine, 2014; Regions of Ukraine, 2020))

Region	The 2005 year	The 2012 year	The 2017 year	The 2019 year
Without changes				
Dnipropetrovsk	9.3	10.1	10.5	9.8
Zakarpattia	1.5	1.5	1.4	1.5
Zaporizhzhia	4.5	3.8	4.4	3.9
Ivano-Frankivsk	2.2	2.2	2.1	2.2
Mykolaiv	2.2	2.0	2.3	2.3
Rivne	1.6	1.5	1.6	1.7
Kherson	1.5	1.3	1.6	1.6
Chernivtsi	1.0	0.9	1.0	1.0
Chernihiv	1.7	1.6	1.9	2.0
Volyn	1.5	1.4	1.7	1.9
Sumy	1.8	1.7	1.9	1.9
Odesa	4.7	4.4	5.0	5.0
The share of the region in the country's GDP has increased				
Vinnytsia	2.3	2.3	3.1	3.3
Zhytomyr	1.7	1.7	2.1	2.1
Kyiv	3.5	4.8	5.3	5.5
Kirovohrad	1.6	1.5	1.8	1.8
Lviv	3.9	4.3	4.9	5.4
Poltava	4.1	3.9	5.0	4.7
Ternopil	1.2	1.2	1.4	1.4
Kharkiv	5.8	5.6	6.3	6.2
Khmelnytskyi	1.8	1.8	2.1	2.1
Cherkasy	2.0	2.1	2.5	2.6
Kyiv city	17.5	18.9	23.5	23.9
The share of the region in the country's GDP fell				
Donetsk	13.1	11.7	5.6	5.2
Luhansk	4.5	4.0	1.0	1.0

It is also noteworthy that the share of the city of Kyiv in the state economy is gradually increasing, which indicates the growing asymmetry in the development of the capital and peripheral regions. After February 24, 2022, these trends only intensified, and Ukraine faced even more challenges in addition to the newly experienced phase of the COVID-19 pandemic, regarding uneven territorial development. In the period from 2020 to 2022, before the start of the war in Ukraine, another factor had a significant impact on regional development in the country – the COVID-19 pandemic. It is appropriate to note that the international nature of the COVID-19 pandemic has led to the emergence of a number of challenges for the economies of many countries of the world, covering different regions, their financial and budgetary spheres and political and institutional environment.

Special attention in the research of scientists in 2020-2022 is paid to determining those factors that condition the vulnerability of territorial objects to the impact of COVID-19, and inhibitory factors that, on the contrary, slow down the spread of the negative consequences of the pandemic. These studies were preceded by scientific works on analyzing other indicators that provoke the growth of the country's economy.

A meta-analysis (Ziabina et al., 2020) of the theoretical and methodological landscape of the development concepts evolution was conducted. For this, a sample of 96,904 publications (according to the scientometric database Scopus) dedicated to research on development theory was generated. Based on the results, five main stages of research were identified (Fig. 4.1): 1) the concept of endogenous development, which prevailed in science until 2014, is related to internal factors of development (human capital, labor productivity, production capacity); 2) the concept of innovative development, which dominated in 2014-2016 (Fig. 4.2), is related to innovations and scientific and technological progress; 3) the concept of sustainable development, which prevailed in the studies of 2016-2018 (Fig. 4.3), is related to the analysis of the determinants of national growth in the context of achieving the goals of sustainable development; 4) the concept of inclusive development, which prevailed in 2018-2020 (Fig. 4.4), is related to the issue of growth through the prism of achieving a state of equality of determinants that cause the quality of life level, the development of social institutions based on the principles of accessibility for all population; 5) the concept of welfare-oriented development (Fig. 4.5), which became dominant in 2020 in the conditions of the spread of the COVID-19 pandemic around the world, is

related to the definition of national growth indicators in the context of achieving the resilience of the country's socio-economic system in the presence of risk factors for public health. At this stage, scientific research touches on health promotion and social-behavioral patterns in the health care system.

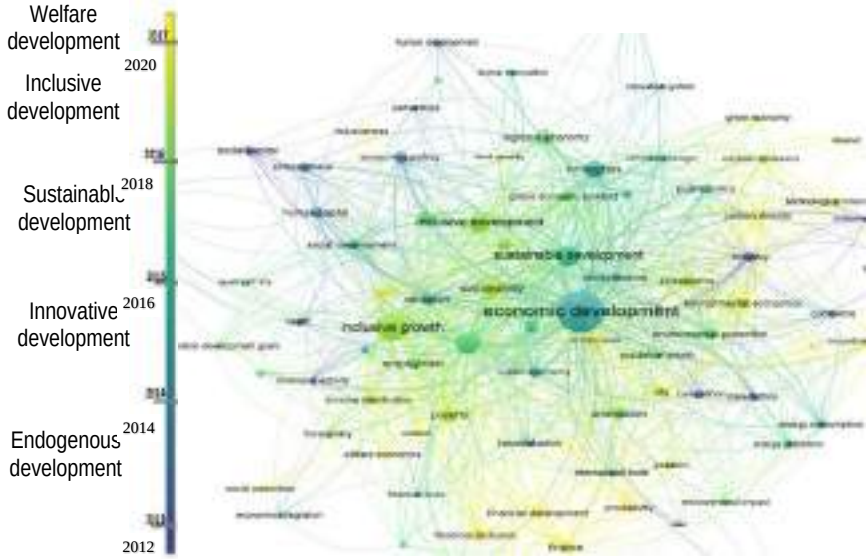
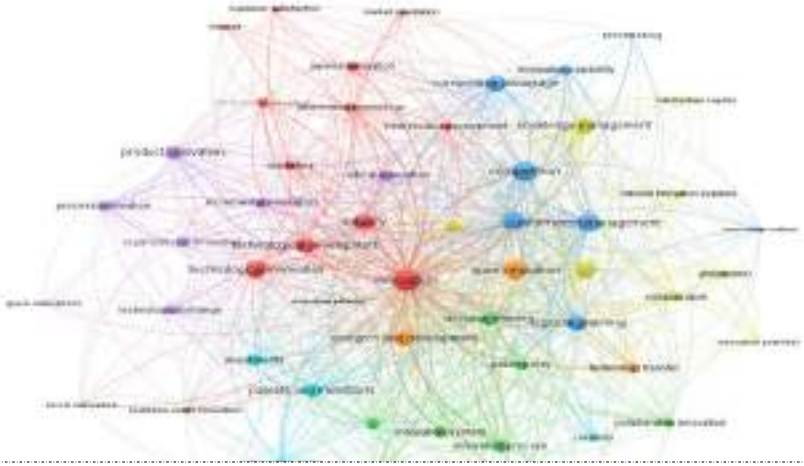


Figure 4.1 – Visualization map of the evolution of development theories

The systematization of the scientific work of foreign and domestic scientists regarding the definitions of a region that has competitive advantages made it possible to single out the following different conceptions: 1) resilient-formative, when a region is considered successful, where development is focused on three main components: the promotion of sustainable development business, ecologically responsible territorial planning and support of projects that have a positive socio-ecological impact (sustainable region); 2) the "center – periphery" approach, when the leading region is the one that combines technological and social achievements in contrast to other regions that are distant from the center and underdeveloped (the central region); 3) economic, when there are advantages of a region with a developed economy with high indicators of economic support for the local population, which does not need subsidies from the state or these subsidies are minimal and ensures its development at

the expense of its own resources (developed region); 4) innovative and technological, when a region is successful, the basis of whose development strategy is the purposeful search and effective management of innovations in all spheres of the economic, social and spiritual life of the territory (innovation region); 5) industry-determining, for which the leading region is a region where significant production capacities of a certain industry or several industries are concentrated and/or which is a center of tourism due to the presence of cultural and historical heritage, unique natural territories, objects of other value for tourism and/or which accumulates a number of educational institutions, clusters, hubs, etc., representing an educational center (industrial, tourist or educational region, etc.).

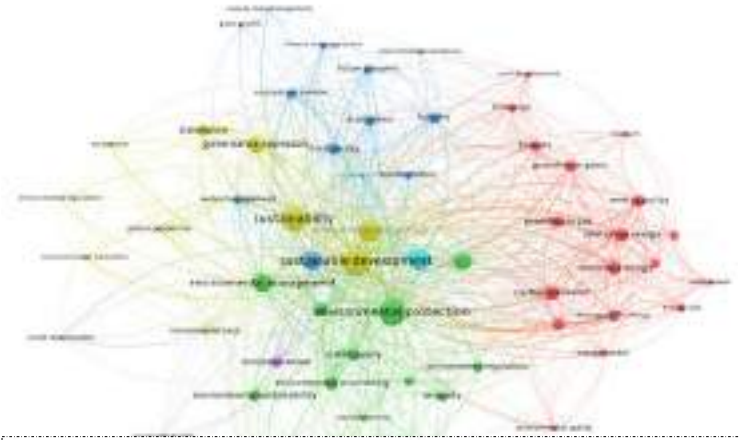


Research vector: innovative development, technological development, information management, innovative system

Figure 4.2 – Clustering of identified research relationships on the theory of innovative development

It is worth noting that there is no simplified and widely used formulation of the meaning of the term "healthy region" and there is a lack of justification regarding the role of the health factor in increasing the effectiveness of the regional policy, which necessitated the clarification of the essence of the definition of "healthy region" to determine the prerequisites and determinants of achieving the goals of healthy

development of territorial units. A healthy region is defined as one whose advantages are a high level of the health index of the local population and its health-centric behavioral patterns, effectively functioning health care links, and an established system of preventive work against diseases, which forms the competitive advantages of the territory in matters of countermeasures threats to public health and the formation of effective human capital, which determines the sustainability of economic development in the long term (Vasilyeva et al., 2020; Rosokhata et al., 2020; Khomenko et al., 2021).



Research vector: environmental management, environmental protection, renewable energy

Figure 4.3 – Clustering of identified relationships for research on the theory of sustainable development

The analysis of the concept of regional equality in the Google Books Ngram Viewer environment with the initial period from the 70s of the last century shows that the topic of regional equality is of constant interest to researchers with a certain decrease in publication activity in 2015, but with a renewed increase in the popularity of research in this area from 2016. The trend is still growing, Figure 4.6.

Note that each subsequent type of development considered above does not negate, but harmoniously develops the previous ones, Figure 4.7. The modern development of social relations objectively formed the need

for a perfect model of economic development, which involves not only maintaining the balance between economic, social and environmental components of development but also aimed at achieving the most lasting advantages of the territory in health, in particular in conditions of risks to public health, which is epidemiological threats.

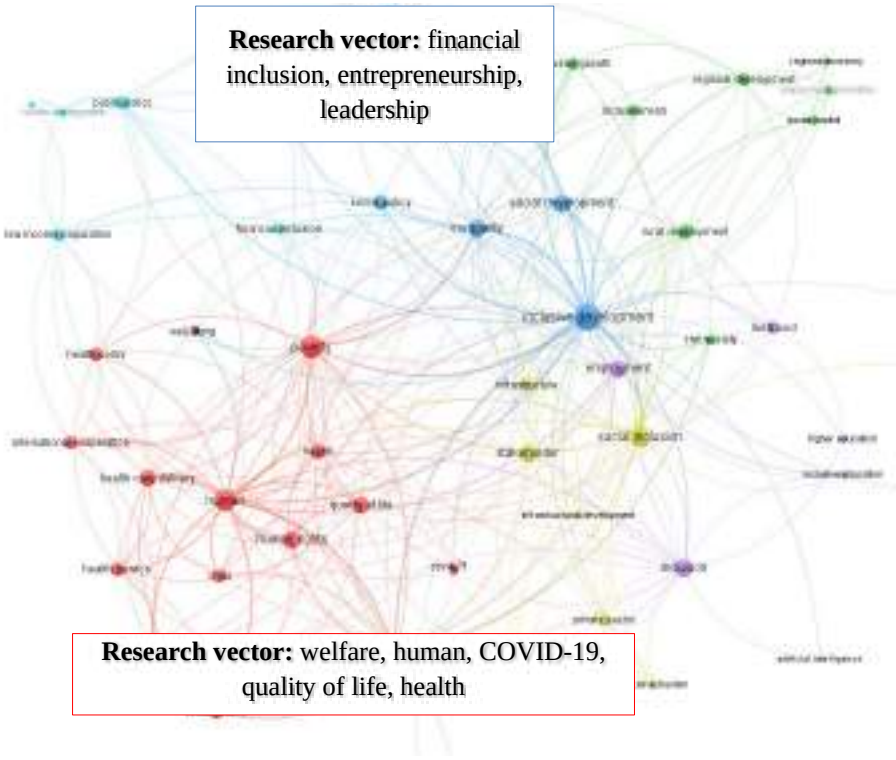
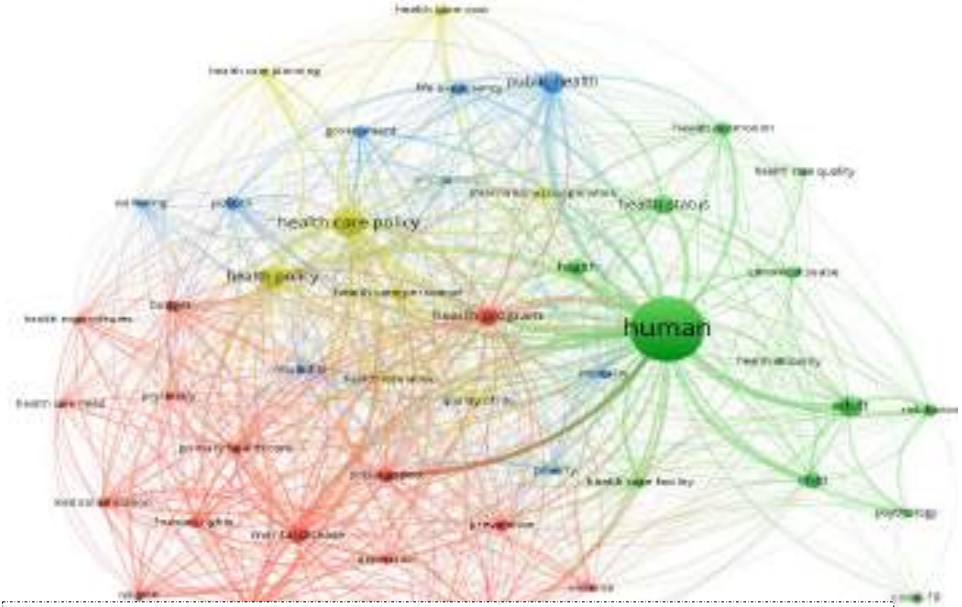


Figure 4.4 – Clustering of research relationships on the theory of inclusive development

This will make it possible to reduce the destructiveness of the impact of adverse events on the health care system in the region in the future. Moreover, health is understood as economic stability, a positive social and ecological situation, and health as a component of the human potential of a certain territory (the concept of holistic health is taken into account – a combination of physical and spiritual well-being). The figure highlights the basic distinctive features as factors of the model that determine the success of its implementation and are the starting points for further movement

toward the implementation of the next development model.



Key categories in four clusters: welfare policy, health promotion, economics of the health care system, socio-behavioral aspects of the health

Figure 4.5 – The results of the clustering of scientific patterns by the category "welfare-oriented development"

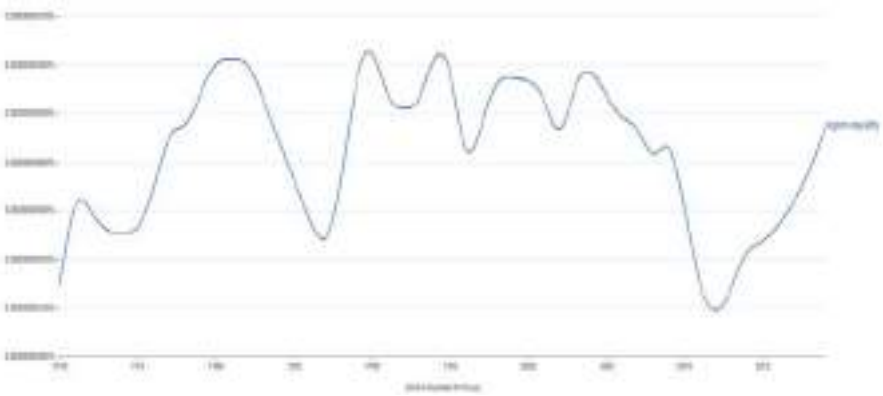


Figure 4.6 – The number of scientific studies on the topic of regional equality

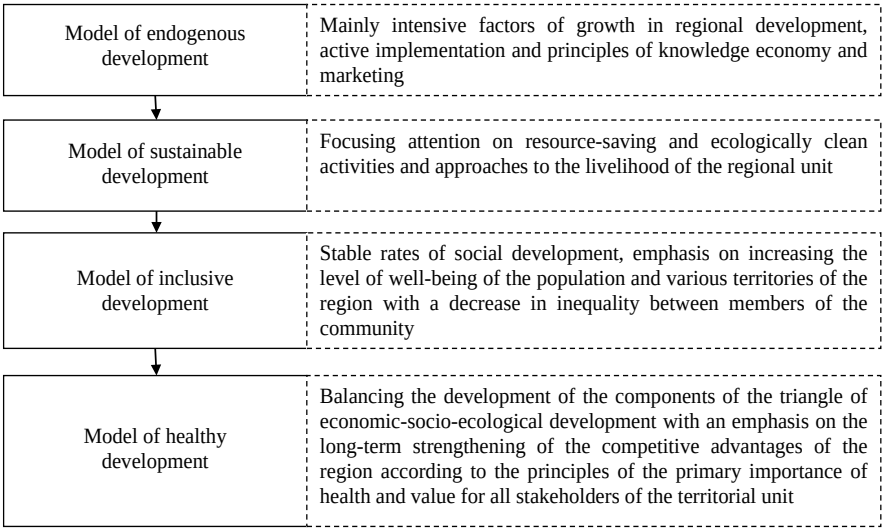


Figure 4.7 – The sequence of transformation of models of regional development into a model of improving the economy

The uneven development of regions could be caused by various components: social, cultural, geographical, infrastructural, resource, etc. The more comprehensively all components of regional development are met, the more resistant it is to threats: socio-economic, political, epidemiological or even image-related. It is appropriate to pay attention to the reserves of achieving high competitive positions of the regions in the conditions of turbulent conditions caused by risks in health care, which, in particular, take place in the conditions of martial law. It is necessary to focus attention on reserve factors, such as those that increase the resistance of the subject to probable threats arising under the influence of factors of the external environment of the system (Minchenko & Demchuk, 2021; Starchenko et al., 2021; Touil Ait & Jabraoui, 2022). Over the years, the research of scientists has evolved from the study of endogenous factors of development to health and well-being-oriented development in the 20s of the current century, which results in a significant reassessment of the dominant factors of growth in the scientific world – the achievement of a stable state of the body, resistance to chronic diseases and pain, formation of a sufficient level of personal holistic health, which makes each individual more adapted to risk factors, and, therefore, forms social regional "immunity" to vulnerable factors.

4.3. Formation of competitiveness of medical institutions on the basis of partnership

In the conditions of intensifying competition in the market of educational services, which, in particular, causes the migration of potential students and teachers of institutions of higher medical education, the implementation of the strategic goals of the field of higher medical education is possible through an adequate assessment of the educational competitive environment of institutions of higher medical education, as well as their competitiveness.

Reforming medical education to provide autonomy to higher education institutions to train modern and in-demand qualified medical professionals who will provide quality medical services increases competition, integration of higher medical education institutions, and partnerships with business and the state.

The competitiveness of modern universities depends significantly on the level of their market orientation, the determination of strategic guidelines for their development based on the results of comprehensive marketing research, the development of an effective marketing strategy and efforts to constantly improve their daily activities to maximally satisfy the needs of target groups of consumers. At the same time, it is important to understand the modern competitive environment and development trends in higher education (Vasylkova, 2016). Under such conditions, there is a need to formulate the conceptual basis for the development of the competitiveness of institutions, which is considered as the ability to satisfy the needs of consumers, providing public benefit, creating a long-term intangible product (service) and its effective development, using competitive advantages and the ability to quickly adapt to changes in the market of educational services and labor.

The modern direction of the transformation of medical education and health care to the formation of the environment of the medical community is based on the selection and support of carriers of the new academic culture, internationalization of education and science, and communication. In this context, the final indicator of a successful reform is the quality of training of a medical specialist and his ability to provide modern high-quality services that will correspond to the main values of the country – protection, safety and preservation of human life. The solution to the issue of quality lies in the level of improving the knowledge and skills of the graduate, which is possible today by combining the relations of educational

institutions as independent players in the market of educational services and main scientific researchers, business structures - customers of services, future employers, the state as a controller of services and a guarantor of life safety. It is this format of partnership relations that can become an incentive for a healthy competitive struggle for a «quality» medical specialist and scientist.

The study of competitiveness in the market of educational services became the subject of the works of many domestic and foreign scientists, such as: (Hutsaliuk, 2018), (Navolokina, 2018), (Stepko et al., 2004), (Klaus Schwab, 2020), (Bondar et al., 2021) and others. The study of the problems of higher education, the issue of strengthening competitive advantages, the quality of medical education based on partnership relations in the conditions of competition in the market of educational services and the labor market was carried out by such leading scientists as (Baluyeva, 2013), (Vasylkova, 2016), (Semenets, 2016), (Romanovsky, 2012) and others.

The research used a complex of general scientific and special methods and approaches, such as: induction and deduction, generalization, abstraction, explanation, classification – to justify theoretical and methodological approaches to the formation of the competitiveness of the field of higher medical education and its institutions; comparison and systematic approach - to determine partnership as a form of economic interaction in the market of educational services; analysis and synthesis, factor analysis, construction of ratings - for assessing the competitiveness of the field of higher medical education and its institutions in the context of economic interaction; system-structural method - for the development of the concept of the formation of the competitiveness of the field of higher medical education and its institutions and recommendations for the improvement of the state regulatory policy regarding the market of educational services in Ukraine.

In the modern conditions of globalization development, the competitiveness of the country's economy depends on its ability to respond in time and adequately to the needs of society and to produce innovations, which is possible only under the condition of a high-quality education system, high quality of human capital and quality of life and health care. Despite the high degree of coverage of the population by education, in particular higher education, its quality, the level of implementation of scientific research developments in the Ukrainian economy and the level of personnel training are in an unsatisfactory state (Semenets, 2016). Thus,

according to UNDP research on the level of human development, in 2017 Ukraine was ranked 88th out of 189 countries for which the Human Development Index (HDI) is calculated. According to the estimates of the experts of the World Economic Forum, for the period of 2016-2017, Ukraine ranked 85th among 138 countries of the world according to the Global Competitiveness Index (GCI), improving its position by five points, and for the period of 2017-2018, Ukraine ranked 81st th place among 137 countries of the world, improving its position by four points. According to 2020 data, Ukraine rose 14 positions in the Human Development Index and this year ranks 74th (The Global Competitiveness Report, 2019). (Tab. 4.2)

Table. 4.2 – Dynamics of the components of the Human Development Index as of 2020 (compiled by the authors based on (Derzhvoshininform, 2021)

Country	HDI	Life expectance at birth (years) SDG3	Expected years of schooling (years) SDG4	Mean years of (years) schooling SDG 4.6	Gross national income (GNI) per capita (PPP$) SDG 8.5
Sri Lanka	0.782	77.0	14.1	10.6	12.707
Bosnia and Herzegovina	0.780	77.4	13.8	9.8	14.872
Grenada	0.779	72.4	16.9	9.0	15.641
Mexico	0.779	75.1	14.8	8.8	19.160
Saint Kitts and Nevis	0.779	74.8	13.8	8.7	25.038
Ukraine	0.779	72.1	15.1	11.4	13.216
Antigua and Barbuda	0.778	77.0	12.8	9.3	20.895
Peru	0.777	76.7	15.0	9.7	12.252
Thailand	0.777	77.2	15.0	7.9	17.781

According to the index, the life expectancy of Ukrainians is 72.1 years. The education index measures the average duration of education of the population, which is 11.4 years and the expected duration of education of the population is 15.1 years. The index of the gross national income per capita is $13,216. Let us emphasize that according to the indicators «higher education and professional training» and «health care and primary education» Ukraine ranks high among 137 countries - 35 and 53, respectively, which makes it possible to speak about a good potential for increasing competitiveness (Fig. 4.8). However, despite the high indicators

of the state of higher education and health care in the country's competitiveness rating, there remains the question of quality education, which will provide an opportunity to create new knowledge, commercialize it, invent new technologies and apply innovations. Thanks to this approach, innovative potential develops in developed countries and a high level of quality of life of the population is achieved.

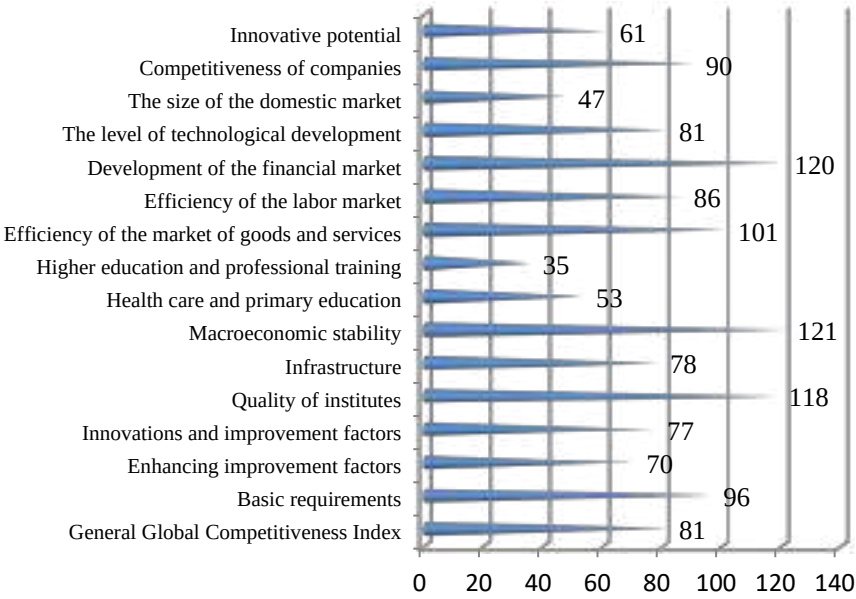


Figure 4.8 – Dynamics of the components of the Human Development Index for the period from 1990 to 2020 (compiled by the authors based on (Slovo i dilo, 2020, Derzzhovshininform, 2021))

The innovative development of the country is based on the creation and introduction of new technologies in all spheres of economy and social life. At the same time, the maximum effect is achieved when such technologies are produced domestically as a result of the effective work of highly educated and qualified personnel. The Ukrainian educational system needs to solve a number of problems, among which the following should be singled out (Semenets, 2016):

– unpreparedness of higher education institutions to function in market economy conditions;

– decrease in the quality of education and competitiveness of educational institutions on the global market;

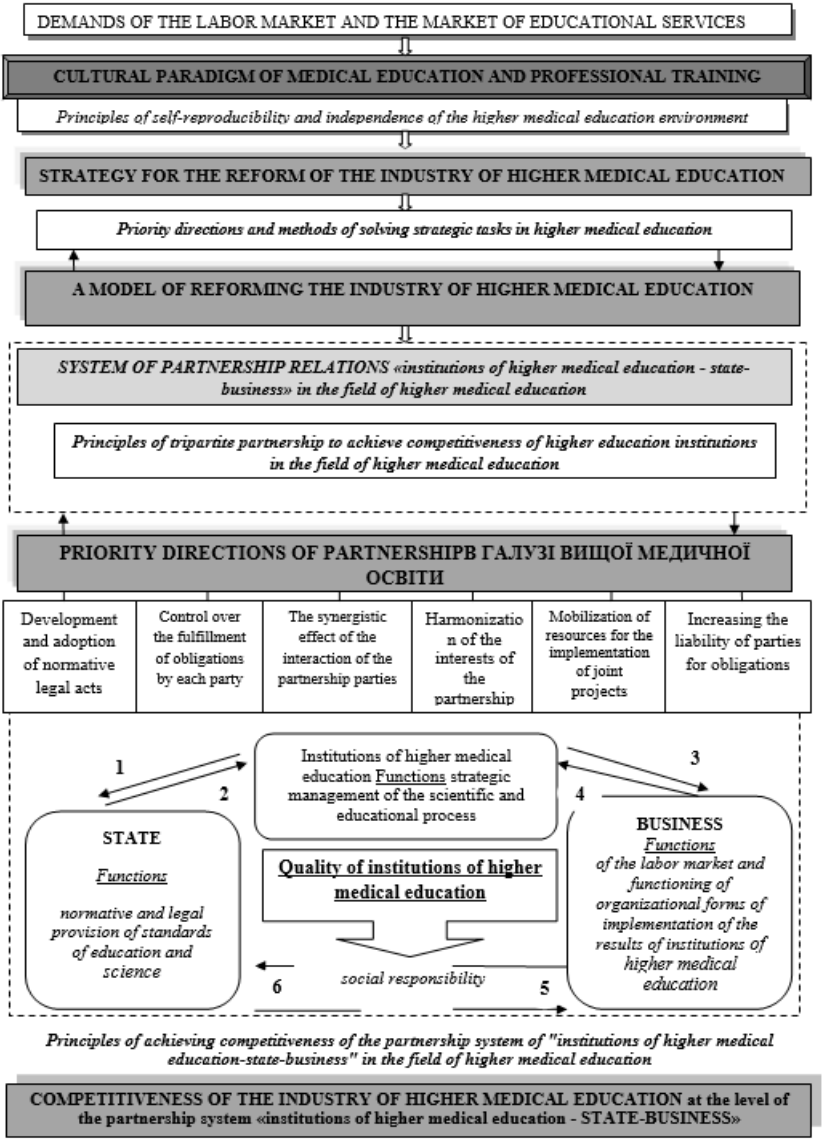
– lack of effective partnership between the state, higher education institutions and business;

– discrepancy between the offer of educational services and the demand for them from the labor market;

– shortage of highly qualified personnel;

– outdated material and technical base.

At the level of higher medical education, as well as the sphere of health care, it is appropriate to say that the partnership is able to provide a new quality of the provided educational and other related services, which are sectoral components of other spheres of the economy of Ukraine and scientific and technological progress, the intensification of innovative processes, internationalization of capital in the field of education, formation of foreign markets for educational services, etc. At the same time, the development of partnership relations based on the formulation and development of competitive advantages in the partnership system will have a qualitative result - the cumulative effect of high-quality higher medical education, and therefore a highly competitive educational institution, which should become a participant in the innovative development of the economy and human development of the country. Achieving such an effect is possible thanks to the implementation of the Concept of forming the competitiveness of the field of higher medical education (Fig. 4.9) and its institutions based on a partnership between three parties (subjects) of the national economy: universities, the state and business (private sector) (Navolokina, 2018). The implementation of the Concept of the formation of the competitiveness of the field of higher medical education on the basis of partnership (hereinafter - the Concept) should, first of all, be based on the principles of the state strategy for the development of higher education and medical education, in particular. Thus, the Decree of the Cabinet of Ministers of Ukraine dated February 27, 2019 No. 95-r approved the «Strategy for the Development of Medical Education in Ukraine» (hereinafter - the Strategy), the implementation of which is planned for 10 years (Decree of the Cabinet of Ministers of Ukraine, 2019).



(1 – forms of interaction; 2 – product of activity; 3 – resources; 4 – product of activity; 5 – resources; 6 – forms of interaction)

Figure 4.9 – The concept of forming the competitiveness of the field of higher medical education and its institutions on the basis of partnership

The strategy declares that the task of medical education today is to ensure the provision of quality medical care to citizens thanks to the high level of training of medical workers, whose values should be the life and health of the patient. And quality medical care can be achieved by changing the cultural paradigm and creating a new professional environment based on the principles of self-reproducibility and independence.

The principle of self-reproducibility provides for the introduction of a system of differentiated financing and self-management at the level of institutions of higher medical education when providing educational services. The principle of independence involves the development of own research and production platforms in the training of medical specialists and academic, financial and organizational autonomy of institutions (Hutsaliuk et al., 2020).

Based on this, the goal of the Strategy is to build a high-quality system of medical education in Ukraine to provide health care with medical workers with a high level of training (Order of the Cabinet of Ministers of Ukraine, 2019).

To achieve the goal, priority directions are provided: the quality of scientific research; development of academic culture in medical education; financing and management; quality of postgraduate education; the quality of higher medical education, and methods of solving strategic tasks and problems in the field of higher medical education (Fig. 4.10). The implementation of measures in these directions must comply with the principles of self-reproducibility and independence.

The modern level of competition among medical universities and the development of technologies in the medical field, which requires a highly qualified specialist in the market of medical services, dictates the reform of higher medical education in the direction of choosing the optimal model of functioning of higher medical education institutions as a business entity in a competitive environment. Such a model can become a model of partnership relations in the system “institutions of higher medical education – state – business”.

The model of such interaction was proposed by H. Itskovits in the form of a "triple spiral" as a synthesis of elements. The model provides a platform for the formation of institutions, the creation of new organizational forms for the implementation of innovations. The triple helix usually begins with establishing a reciprocal relationship between the university, business and the state, in which each tries to improve the efficiency of the others (Romanovsky, 2012). Thus, the cumulative effect

of the quality of the product of the activities of the subjects of the relationship is achieved.

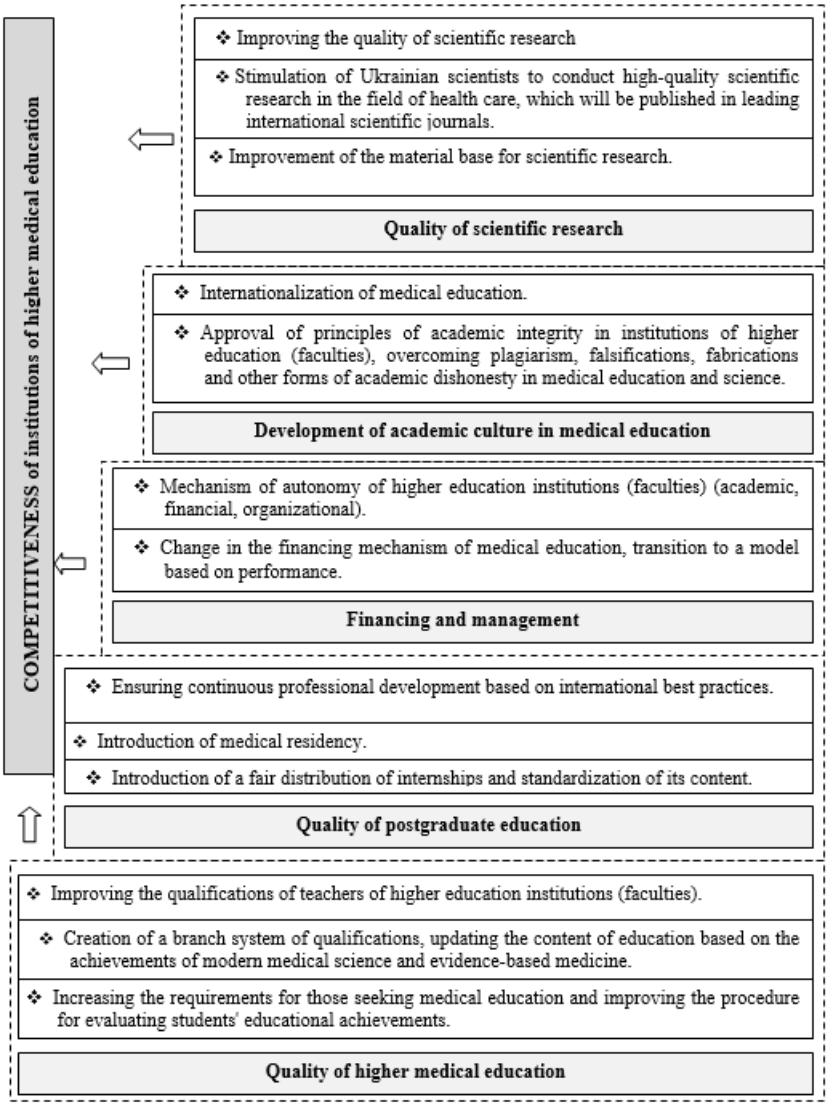


Figure 4.10 – Priority directions and methods of solving strategic tasks in medical education to increase the competitiveness of ZVMO (compiled by the authors based on (Bondar et al., 2021; Hutsaliuk et al., 2020))

The basis of the «triple helix» model assumes that in modern society the core of innovation activity is the university, which cooperates with industry, performing some of the functions of its research and development departments, and concentrates government efforts related to the development of innovations. In the tripartite cooperation system, higher education institutions get the opportunity, using their own material and financial base, to develop business incubators, educational enterprises with venture capital, science parks, consulting companies, etc. This ensures their implementation of real public or private projects, the participation of students and teachers in scientific research funded by both business and the state. The possibility of achieving such an effect stimulates the university to establish connections and develop cooperation (Romanovsky, 2012). Thanks to such cooperation and the obtained results, the institution of higher education increases its competitiveness in the market for the provision of educational services.

The system of partnership relations «institutions of higher medical education - the state – business» functions in competitive conditions according to the characteristics of the competitiveness of the socio-economic system: struggle and rivalry, difference/similarity, limitation, subjectivity, - under the influence of internal factors (for example, the cost of education, innovative activity, information and communication support of the educational process, financial support, employment, etc.) and the external (for example, the level of population income, labor market conditions, state tax policy, competition from foreign institutions of higher medical education, regulatory and legal framework, etc.) environment . It should be noted that in accordance with the Concept of reforming higher medical education, the partnership system provides for the implementation of measures in priority areas and methods of solving strategic tasks in medical education to increase the competitiveness of higher medical education institutions, which should also comply with the principles of tripartite partnership (Table 4.3). Each of the principles must be implemented in each of the directions in accordance with the strategic goal.

The implementation of the model of reforming higher medical education based on tripartite partnership is carried out with priority areas of partnership:

1) development and adoption of normative legal acts;
2) control over the fulfillment of obligations by each party;
3) synergistic effect of the interaction of the partnership parties;
4) harmonization of the interests of the partnership parties;

5) mobilization of resources for the implementation of joint projects;
6) increasing the responsibility of the parties for obligations.

Table 4.3 – Principles of tripartite partnership to achieve competitiveness of institutions of higher medical education

Principles	Content
Constructiveness	The formation of a system of constructive dialogue between the parties (institutions of higher medical education, the state and the private sector) regarding the regulatory and legal support of the functioning of institutions of higher medical education within the framework of medical reform and reform of higher education and the implementation of projects related to the implementation of scientific research.
Subsidiarity	The organizational and legal principle according to which the management mechanism of institutions of higher medical education and the system of providing educational services should be built “from the bottom up”.
Mutual trust	Ensuring transparent relations regarding funding and management.
Mobilization of resources	The use of resources by higher medical educational institutions independently and in accordance with the quality results of the training of medical specialists and the results of scientific research under investment projects.
Selection	Formation of interested and motivated parties in reforming medical education and graduates.
Internationalization	Interaction at the international and European levels, according to the training standards of medical specialists and the quality of education.
Communication	Openness between the parties of partnership relations and constant dialogue regarding changes in demand and supply in the market of labor and medical science.
Autonomy	The ability of higher medical education institutions to independently make decisions regarding the main activity of providing educational services and implementing investment projects.

In accordance with the defined priority directions, the subjects of partnership relations – universities, the state and business – implement functions regarding the quality of educational services provided by institutions of higher medical education and the quality of qualifications of

medical specialists in accordance with the principles of achieving the competitiveness of the partnership system «institutions of higher medical education - state – business» : readiness for changes, value creation, continuous renewal and duration (Hutsaliuk & Navolokina, 2018)

The process within the platform of elements (parties of the partnership) of the «triple spiral» functions on the basis of solving two tasks in higher medical education. First, the declaration of the obligations of the parties of partnership relations, aimed at achieving the quality of institutions of higher medical education on the basis of responsibility, since the influence of the state on the processes of scientific and educational regulation should decrease. Secondly, tripartism relations should move into the plane of effective cooperation (from the result), since a synergistic effect of their interaction arises on this basis. Effective functioning of institutions of higher medical education in the partnership model is implemented through strategic management of the scientific and educational process within the platform element and through tools of interaction with the state and business. The task of strategic management in institutions of higher medical education is to assess the long-term perspective and creates the possibility of a timely response of the institution to changes in the external and internal environment. In conditions of competition, higher medical education institutions should apply strategic management methods for making strategic decisions, in particular:

- methods of strategic planning;
- method of choosing competitive strategic positions;
- management by the method of ranking strategic tasks;
- management by weak signals.

Strategic planning to increase the competitiveness of institutions of higher medical education should be ensured by the policy at the level of the state and the institution in the field of improving the quality of institutions of higher medical education. The basis of such a policy should be the constant improvement of the quality of educational and scientific processes taking into account world trends on the basis of effective feedback with consumers, suppliers, and other interested parties (Stepko et al., 2004). The main principles of the policy can be defined as:

1) training of competitive specialists based on the competence approach;

2) ensuring the formation of a quality management system of institutions of higher medical education for the provision of educational services and maintaining the high quality of educational, scientific,

production and technological processes of the university and the quality of training of specialists;

3) integration into the international educational space, implementation of joint educational, scientific, medical and innovative projects and programs;

4) internationalization of universities with entrepreneurial structures and the state regarding the results of research and educational activities;

5) implementation of educational programs of the European and international level by improving existing learning technologies and implementing additional educational programs;

6) continuous improvement of the qualifications and practical training of professors and teaching staff, ahead of the introduction of advanced educational and information technologies, expansion of the network of clinical and educational bases, and technological improvement of existing medical and pedagogical complexes;

7) introduction of innovatively oriented educational and practical processes of training medical specialists, creation of a production base for the implementation of innovative projects;

8) strengthening the leading role of university self-management and regulating the responsibility of all employees in ensuring the quality of training and education.

Policy in the field of quality in institutions of higher medical education should be implemented due to the effective functioning of the quality management system. The quality management system is an integral part of the general culture and management system of institutions of higher medical education, it should extend to all levels and processes. The high competitiveness of graduates in the field of medicine and scientific development is the main criterion for the effectiveness of the policy in the direction of improving the quality of practical training of medical personnel. It is indisputable that the goals for ensuring the quality of practical training of medical personnel of institutions of higher education should be developed with the further implementation of a modern quality management system and as a means of achieving the strategic goals of the institution (Fig. 4.11) (Baluyeva, 2013).

Investment projects, economic development strategies, technology parks, technopolises, incubators and other forms of research and production activities, integrated systems for evaluating the quality of education and research results in accordance with business requirements, national and regional integrated to international system grants "education - science -

business - state", etc. The main product of interaction is an educational service, a graduate's qualification, scientific developments, information and knowledge. Interaction resources include financial, organizational and academic resources. It should be noted that interaction at the level of the state and business should be based on the principle of social responsibility, that is, on the basis of educating a humane medical specialist whose activities are aimed at preserving human health and life.

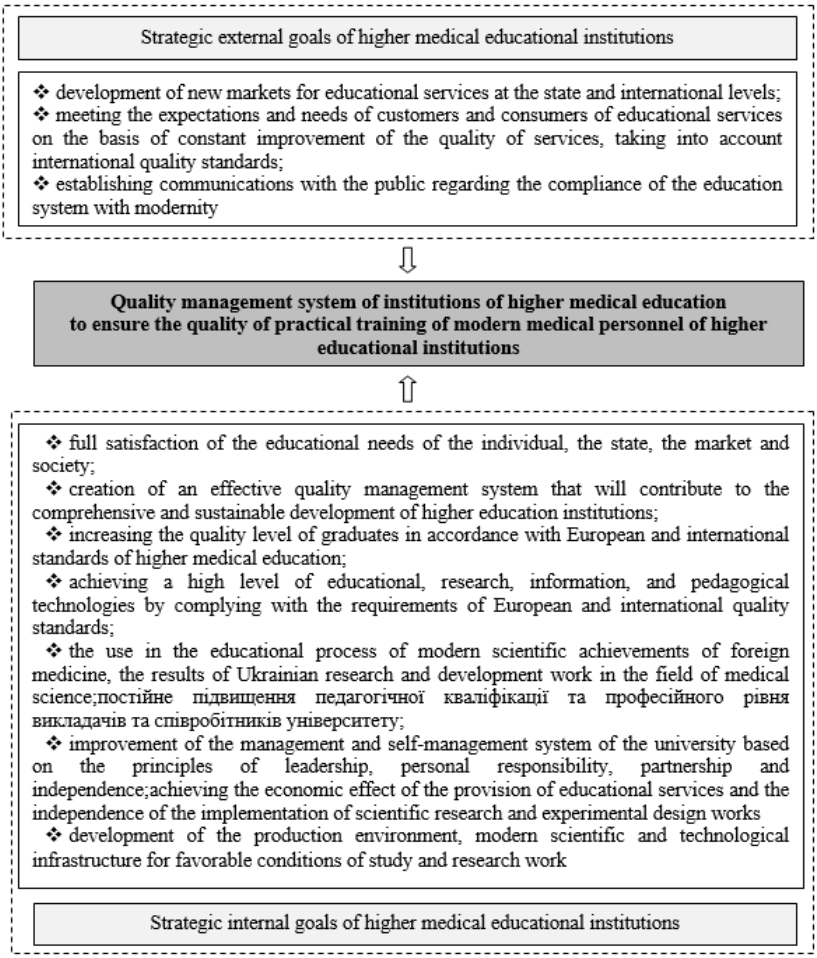


Figure 4.11 – Strategic goals for ensuring high-quality training of specialists in institutions of higher medical education in conditions of competition

Partnership relations in the form of interaction of educational institutions in the market of educational services and scientific research, business structures as customers of services, future employers and the state as a guarantor of the safety of life and health of the population stimulate the competitive struggle for a "quality" medical specialist and scientist and help to achieve and support high competitiveness of institutions of higher medical education. The development of partnership relations in the system of higher medical education determines the achievement of the cumulative effect of obtaining quality education and professional training in the institution, as well as in the market for the provision of medical services. This makes it possible to provide high-quality educational and related services that are sectoral components of other spheres of Ukraine's economy and scientific and technological progress, intensification of innovation processes, internationalization of capital in education, formation of external markets for educational services, etc.

The basis of the proposed concept of forming the competitiveness of the field of higher medical education based on partnership is the implementation of the strategy of modern higher medical education based on the principles of self-reproducibility and independence. The strategy is based on the paradigm of providing quality medical services. The implementation of the concept is based on the reform of higher medical education through the functioning of the tripartite partnership model "institutions of higher medical education - state - business". The model provides a platform for the formation of institutions, the creation of new organizational forms for the implementation of innovations. The relationship between the parties to the partnership should be formed based on mutual responsibility, which will ensure the harmonization of their interests in the direction of raising the standards of the quality of medical education, the level and quality of life of people through an effective system of providing quality medical services. Constructiveness, subsidiarity, mutual trust, mobilization of resources, selection, internationalization, communication and autonomy are defined as the main principles of tripartite partnership for the formation of competitiveness of institutions of higher medical education. To achieve competitiveness, institutions of higher medical education should use strategic management methods for making strategic decisions: strategic planning methods; method of choosing competitive strategic positions; management by the method of ranking strategic tasks; weak signal control.

Thus, the concept of forming the competitiveness of the field of higher medical education based on economic interaction (partnership) provides for the reform of higher medical education through the functioning of the tripartite partnership model «institutions of higher medical education - state – business» by creating new organizational forms for the implementation of innovative processes and methods of selecting competitive strategic positions. The model provides a platform for the formation of institutions, the creation of new organizational forms for the implementation of innovations. Relations between the parties of the partnership should be formed based on mutual responsibility, which will ensure the harmonization of their interests in the direction of raising the quality standards of medical education, level.

4.4. Formation and implementation of the development strategy of Ukraine's health care institutions in the challenges and threats conditions of the XXI century: directions of increase in efficiency

Currently, all subjects of economic activity that function on the territory of our state are in a state of war, uncertainty, turbulence and bifurcation. Therefore, they are constantly faced with various destructive factors. In the state of such variability of the external environment, the enterprise faces new and unpredictable challenges that must be analyzed, which should become part of the improved system of economic security of this business entity.

In today's economic conditions, business owners must clearly understand the state of their functioning. To do this, they need to see how possible it is to turn challenges into risks and threats, as well as how likely the real manifestation of possible dangers that arise is.

A challenge is an objective state of tension that arises within the enterprise as a system and needs to be resolved. It can be defined as a contradiction between the existing state of the system and the need for internal changes, and it is also a theoretical (informational) manifestation of destructive factors. Thus, the main difference between a challenge and risks, threats and dangers is that it is not a destructive factor in itself, but only a reflection of the existing situation. The presence of challenges does not directly affect the economic security of the subject of economic activity.

A threat is already a real event, and the danger moves from the state of possibility to the real plane. For the emergence of a threat, both components are active: there are both the negative factors themselves and the possibility of their influence on the object of economic security (Yatsenko, 2019).

So, according to the sources of occurrence, all threats can be divided into: a) internal (threats associated with shortcomings and miscalculations in the activities of the enterprise itself, which may lead to negative consequences); b) external (threats whose sources are outside the enterprise are difficult to predict, and therefore it is difficult to take appropriate countermeasures in a timely manner).

According to the degree of severity, the consequences of threats caused by them are divided into the following: a) with a low degree of severity; b) with an average degree of severity; c) with a high degree of severity of consequences. According to the degree of probability, threats can be: unlikely and real.

By subjects of threats: a) from dishonest competitors; b) by criminal structures; c) from counterparties; e) from employees, etc.

By objects of encroachment: a) threats to labor resources; b) threats to material resources; c) threats to financial resources; e) threats to information resources.

By influence at the stage of activity: a) at the organizational stage; b) at the stage of conducting activities; c) at the end of the activity.

From the above classification of threats in the activity of the enterprise, it can be concluded that there are various threats to the economic security of the enterprise, which can simultaneously belong to different classification groups (Laptev, 2016).

To counteract each type of threat, it is advisable to use appropriate strategies, technologies, methods, and means of guaranteeing economic security. This approach makes it possible to classify threats and determine the most effective measures to counter them.

In this context, the company's development strategy can be characterized as a strategic management tool, as well as a set of directions and means of achieving the company's development goals in order to prevent the impact of challenges and threats. In addition, the company's development strategy is positioned as a long-term flexible action plan of innovative direction with an appropriate level of risk, which is based on a detailed analysis of the company's internal and external environment, depends on human factors and requires investments to achieve effective results, increase the competitiveness of the company's products and services.

At the same time, it is worth visualizing the architecture of the research topic (Fig. 4.12).

Among the main alternative strategies for the development of a medical institution, the following are traditionally distinguished: 1) growth (namely: diversification strategy, vertical integration strategy, strategy for increasing market share, stabilization strategy (maintaining market share), reorientation strategy); 2) downsizing (namely: curtailment strategy, liquidation strategy, economy strategy).

The main factors of external threats to health care institutions in Ukraine are: administrative, political, economic, legal, competitive, criminal, scientific and

technical, international, etc. Considering the factors listed above in more detail, you need to understand how they, each individually or in combination, can affect the medical prescription. The threat of the administrative factor is that certain negative actions by the administrative resource of state bodies or local self-government bodies may be directed at the hospital's activities. The threat of the political factor depends on the consequences of the functioning of the political sphere of the state. One of the most important threats of this factor is the lobbying of interests in politics, which can negatively affect the health care institution. Other threats relate to the unstable political situation in the country, which is manifested in the government's development of a strategy regarding the role of the government in the political and economic development of society.

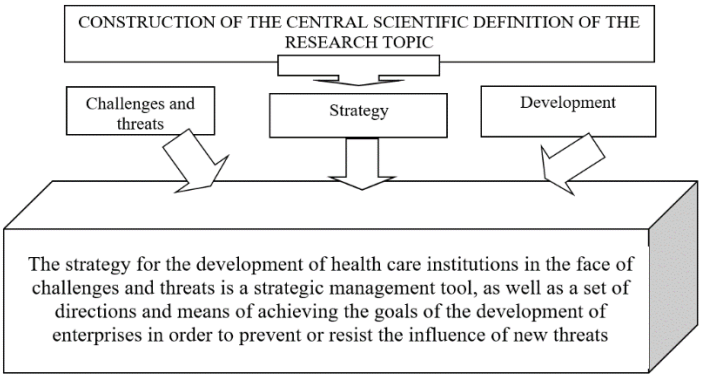


Figure 4.12 – The architecture of the formation of the concept "Strategy of enterprise development in the conditions of challenges and threats"

The threat of the influence of the economic factor appears, first of all, due to the inefficient financial and economic policy of the state. This includes changes in the economy (recession or development), the tax system, the budget deficit, inflation, fluctuations in the national currency, etc. The threat of the legal factor manifests itself in the unsystematic and ineffectiveness of the legal framework, which creates the threat of raiding or pressure from unscrupulous competitors.

The threat of the competitive factor arises, first of all, due to illegal actions of competitors, acquisition of trade secrets, industrial espionage, luring of company employees, bribery of company employees by representatives of competitors, conclusion of fictitious agreements, suspension of the company's activities with the use of state authorities, mass media; infecting computer programs with viruses, sending agents, copying computer programs and data, eavesdropping on conversations, etc.

The threat of the criminal factor arises due to illegal actions by criminal structures, extortion and blackmail of company employees; stealing computer information or acquiring it by fraud or abuse of official position; compromising the

company's activities and compromising employees, stopping the company's activities using the powers of state bodies, mass media, threats of physical violence against the company's employees and their relatives, up to their removal, robbery and robberies, raiding, etc.

The threat of the scientific and technical factor consists in the impossibility of applying the latest technologies for the production of high-quality products, due to the degree of their availability for purchase or leasing to enterprises, technological and environmental standards of equipment, etc.

The threat of the international factor manifests itself, first of all, in the state of the world economy. The world economic crisis has a negative impact on the economy of Ukraine, which destabilizes and complicates the work of enterprises of all production industries due to a reduction in demand for products and their exports. Now let's consider internal threats to medical facilities. As mentioned above, each health care institution has its own internal environment, and therefore individual risks and threats, but the factors contributing to their occurrence can be generalized.

The main factors of internal threats to health care institutions in Ukraine: the organizational structure; management system; informational security; technique and technology; financial activity of a medical institution; personnel.

Considering the factors listed above in more detail, you need to understand that each of them individually or all of them together can affect a medical institution. The organizational structure of a medical facility carries a threat due to its inefficiency. Redundant units interfere with the balanced functioning of the medical facility, which makes it more vulnerable to threats. Under the threat of the management system is understood the leadership of the medical institution, top managers, managers of separate units of the middle level, who are responsible for the development strategy and its internal system of economic security.

It is extremely important for management to develop mechanisms for effective management of the security system of a health care facility to minimize risks and threats to its activity. The threat to information security is, first of all, unauthorized access to the hospital's information marketing base, insufficient protection of trade secrets and other confidential information that can harm the hospital if it becomes known to competitors. Internal regulatory documents also play a big role. The low level of providing the management of a health care institution with the information it needs to make management decisions has a negative impact on its activity and development. Unreliable, incomplete or untimely information can lead to choosing the wrong strategy or making wrong decisions. Threat to technology and technology is that outdated equipment or its failure can negatively affect the operation of a medical facility. Obsolete equipment and production technologies can also significantly increase the price of a medical facility's products and make them uncompetitive compared to other products. A threat to financial performance arises from ineffective financial the policy of the medical institution, which may manifest itself in significant costs and

losses, a reduction in wages for employees, the impossibility of updating equipment, dependence on other financial institutions, etc.

Personnel are the main internal threat to a health care institution. The main threats from the personnel side are manifested in: illegal and criminal actions of employees; violation of the established commercial secret preservation regime; violations of the order of use of technical, information and telecommunication means and systems, other violations of order and rules. In Ukraine, there are many threats to health care institutions depending on their field of activity, so these threats are almost always of an individual nature (Laptev, 2016).

Based on the above, we will attempt to summarize the challenges and threats in the 21st century with an emphasis on the work of health care institutions and in the format of supporting system stability. For this purpose, we will apply an integrated approach (Fig. 4.13).

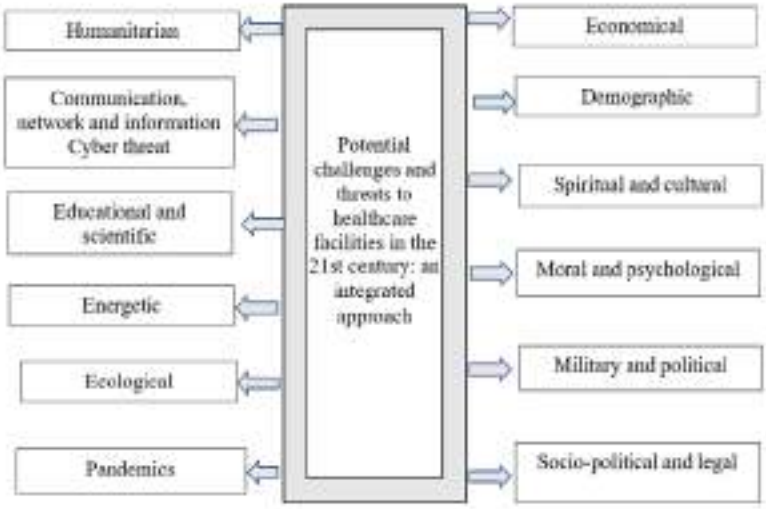


Figure 4.13 – Potential challenges and threats to healthcare facilities in the 21st century: an integrated approach (summarized and constructed by the author based on the processing of information source (Pirozhkov et al., 2022))

The author will try to highlight several important components of Ukraine's national sustainability strategy, which will influence the development of health care institutions. At the same time, the main goal of the national sustainability of countries is the preservation and development of the country's civilizational subjectivity. This means that we must ensure several areas of sustainability. we can interpret national stability as a process, as a certain quality and result of the implementation of the strategy. Therefore, let's focus on the components of the

strategy of national stability, which, at first glance, express its internal dimension, but, in the conditions of a globalized world, are both internal and external at the same time.

Let's highlight the main threats to healthcare institutions in the context of the components of Ukraine's national stability strategy.

1. The communication-network-information threat is aimed at destroying the processes of ensuring the stability of mass communications and requires an assessment of the information environment of Ukraine in terms of challenges and threats (primarily in the mass media and social networks of the Internet) and the ability to effectively counter them with joint actions of the state and civil society.

Cyber resilience means predicting and neutralizing cyber-attacks that are aimed at destabilization in the economic, political, technological and military spheres of the country and can cause the weakening of its subjectivity and various crises (S. I. Pirozhkov et al., 2022).

At the same time, it is worth highlighting the threats to providers of budgetary institutions – health care institutions, in particular:

1) possible outflow of the most qualified personnel to the private sector, which is gradually developing, due to the lack of real incentives for high-quality work;

2) insufficient transparency of financial flows and corruption caused by the growth of informal payments;

3) the threat of loss of patient trust (and with it, gradually, the state order) as a result. Low-quality services;

4) economic inefficiency, and, as a result, lack of interest from possible private investors. The result may be the complete decline of such institutions.

The main causes of threats to providers - budget health care institutions are (Strategic planning, 2020):

1) lack of incentives to ensure the economic efficiency of their own activities and improve its quality;

2) lack or limitation of the possibility for operational and flexible management of the process of redistribution of funds between different cost centers and their direction to the operational solution of priority problems;

3) lack of incentives for effective planning of resources (personnel, investments, etc.).

1.The communication, network and information threat is partly related to the need to gain trust and fight the spread of misinformation in health matters. Patient trust is what increases their adherence to healthy lifestyles, physician recommendations, responsible medication use, vaccinations, and more. The spread of unscientific information and myths about health causes irreparable harm. For example, due to the powerful disinformation campaign of anti-vaccinationists, people refuse vaccinations despite the existence of indisputable evidence of the effectiveness of vaccines, and diseases that could have been prevented continue to spread and cause deaths.

2. Environmental and climate threats are related to the requirement to combat climate threats that affect health. Air pollution kills 7 million people worldwide prematurely every year, and climate change causes extreme weather events, increases malnutrition and the spread of infectious diseases. Harmful emissions cause more than a quarter of deaths from heart attacks, strokes, lung cancer and chronic respiratory diseases.

Along with this, the environmental threat is partly related to the requirement to keep health care clean. Yes, approximately every fourth medical institution in the world does not have normal access to clean water. The lack of water, non-compliance with the rules of hygiene and sanitation leads to the provision of poor-quality and even dangerous medical care, and also increases the chances of infection of patients and medical workers. In all these areas, WHO experts have developed an action plan. Its effectiveness depends not only on the people who make political decisions in a specific country, but also on each individual. We should all take responsibility for our health and the people around us, consult a doctor in all matters, get vaccinated, spread science-proven health information and fight misinformation. This is a significant contribution of everyone to the global health of the world population.

3. Economic threat. It is clear that a successful economy is the basis of the country's civilizational subjectivity, and therefore becomes an important element of the national stability strategy. Therefore, it is necessary to constantly analyze the external and internal economic environment of Ukraine for the presence of challenges and threats and outline the most realistic ways of responding to them.

4. Energy threat. An important element of the country's economic stability is energy stability, which requires monitoring of global and regional energy markets and effective energy policy of the Ukrainian state in the context of awareness of current threats and challenges, and opportunities to counter them.

5. The socio-political and legal threat involves the analysis and neutralization of destructive challenges and threats in the context of the development of the internal policy of the Ukrainian state, its political system, the interaction of the state and civil society, as well as the legal and law enforcement systems of Ukraine, their place in the international legal architecture.

6. The humanitarian threat is aimed at destroying the processes of ensuring basic needs and human rights, analysis of challenges and threats to human development in Ukraine and an effective response to them through the effective functioning of the humanitarian sphere, its subjects and institutions. Demographic stability should probably be included in the structure of humanitarian stability, as an actual direction, one of the most important elements of which is the natural movement of the population and migration problems of Ukraine in the globalized world.

7. The spiritual and cultural threat is aimed at destroying the processes of preserving the artistic and religious environment of Ukraine as those that have the greatest influence on the formation of the worldview, the assessment of challenges

and threats in this area and the development of recommendations for their prevention and neutralization. Moral and psychological stability means the ability of the people of the country to be faithful to the values and principles of public morality, which allows forming fruitful attitudes of citizens regarding the successful counteraction of hybrid threats, especially in conditions of war.

8. Educational and scientific threats are aimed at destroying processes related to the development of education and science, in particular, external influences on these spheres. Successful responses to challenges and threats in this component of Ukraine's national stability strategy require a balanced combination of foreign innovations in the organization of educational and scientific spheres with the development of productive domestic traditions.

9. The military-political threat can be singled out as a separate component, taking into account the state of hybrid war in which our state is. When implementing this component of the strategy of national stability, it is important to study the international military-political environment and the domestic military-political and military-technical potential in the conditions of a hybrid war (Pirozhkov et al., 2022; Strategic planning, 2020).

From the standpoint of characterizing the military threat to health care facilities, the following should be noted. On May 11, 2022, a special session of the European Regional Committee of the World Health Organization was held, dedicated to the health care system of Ukraine and the consequences of the ongoing full-scale invasion of the Russian Federation. Speaking at this session, V. Lyashko called for support for the draft resolution "The emergency situation in the field of health care in Ukraine and neighboring countries caused by the aggression of the Russian Federation" presented by Ukraine.

This resolution envisages: 1) studying the possibilities of transferring the WHO European Office for Non-Communicable Diseases from Moscow to outside the Russian Federation; 2) suspend all events (conferences, seminars, meetings) under the auspices of WHO in the Russian Federation; 3) to bring the issue of the full-scale invasion of Russia into Ukraine and, as a result, the emergence of an emergency in the field of health care to the meeting of the 75th World Health Assembly. A state that kills thousands of our citizens, and has the blood of more than 200 Ukrainian children on its hands, cannot have a voice in the World Health Organization! Currently, 627 health care facilities are damaged, 105 of them were completely destroyed during targeted attacks by terrorists. 396 pharmacies were destroyed, 27 of which were destroyed. More than 200 emergency medical vehicles were shot or captured by the enemy.

There are 235 medical facilities and more than 200 emergency medical aid teams operating in the territories temporarily occupied by the Russian troops, most of which are in the Kherson region. Each number is the life or health of Ukrainians (Liashko, 2022).

It should be noted that the World Health Organization, which since February 24 managed to change its own rhetoric and increasingly opposes the war,

which contradicts all humanitarian principles. A war that puts every fifth inhabitant of the planet at risk of starvation, and the entire world at risk of nuclear war. Today, we receive military or sanction support from all countries of the European region, and the resolution "The emergency situation in the field of health care in Ukraine and neighboring countries caused by the aggression of the Russian Federation" is the smallest step that can be taken to show our position (Liashko, 2022).

So, in this paragraph, challenges and threats to the development of enterprises in today's conditions are investigated, studied and summarized, where a challenge is understood as an objective state of some tension that arises within the enterprise as a system and needs a solution, and a threat is a real event, according to which danger passes from the state of possibility to the real plane.

Thus, 1) according to the sources of occurrence, all threats are divided into: a) internal (threats that are associated with shortcomings and miscalculations in the activities of the enterprise itself, which may lead to negative consequences); b) external (threats whose sources are outside the enterprise are difficult to predict, and therefore it is difficult to take appropriate countermeasures in a timely manner). 2) According to the degree of severity, the consequences of threats caused by them are divided into the following: a) with a low degree of severity; b) with an average degree of severity; c) with a high degree of severity of consequences. 3) By degree of probability, threats can be: unlikely and real. 4) By subjects of threats: a) from unscrupulous competitors; b) by criminal structures; c) from counterparties; e) from employees, etc. 5) By objects of encroachment: a) threats to labor resources; b) threats to material resources; c) threats to financial resources; e) threats to information resources. 6) By influence at the stage of activity: a) at the organizational stage; b) at the stage of conducting activities; c) at the end of the activity.

On the basis of the above, an attempt was made to generalize the challenges and threats in the 21st century with an emphasis on the work of health care institutions, which in the conditions of the globalized world are both internal and external at the same time. Along with this, the dominant among them - military, the COVID-19 pandemic, information (in particular, digitalization) and environmental issues, which require a quick response from management circles, are highlighted. It is noted that to counteract each type of threat, it is advisable to use appropriate technologies, methods and means of guaranteeing security.

To improve the scientific and methodological support of the hospital it is recommended to use a scientific and methodological approach to assess the effectiveness of its process during the development and implementation of a development strategy for top management in health care institutions in the face of new challenges and threats (Table 4.4).

The advantage of the proposed approach is the possibility of additional inclusion of current assessment criteria in accordance with new challenges and threats (Bondar-Pidgurska et al., 2023).

Table 4.4 – The approach to the assessment of the effectiveness of the process of implementation of development strategy for health care institutions of Ukraine in the conditions of new challenges

№	The name of the indicator	Plan	Actual condition	Deviation and necessity improvement		
1	2	3	4	5		
1.	Evaluation of the overall development strategy of the institution					
1.1	The type of development strategy being implemented	…	…	…		
1.2	Management subjects	…	…	…		
1.2	Stakeholders and investors	…	…	…		
1.3.	Characteristics of functional strategies			…	…	…
1.4	Hierarchy of goals			…	…	…
1.5	Markers of strategy implementation			…	…	…
1.6	Areas of strategic management of the development of the institution:			…	…	…
	Organizational			…	…	…
	Political and legal			…	…	…
	Social and medical			…	…	…
	Financial and economic			…	…	…
	Conclusion			x		…
2.	Evaluation of the strategy of adaptation, prevention, resistance of the institution to challenges and threats					
2.1	2. Analysis of the institution's external environment			x		x
	2.1.1. Analysis of general development trends of the world's leading institutions			…	…	…
	2.1.2. Analysis of patient preferences			…	…	…
	2.1.3. Competitive analysis			…	…	…
	2.1.4. Analysis of resources			…	…	…
2.2	2. Analysis of the internal environment			x		x
	2.2.1. Analysis of the availability of tools for adaptation, prevention, and resistance to challenges and threats			…	…	…
	2.2.2. Analysis of the level of adaptability of personnel to changes			…	…	…
	2.2.3. Analysis of the availability of financial support for the strategy of adaptation, prevention, and resistance to challenges			…	…	…
	2.2.4. Analysis of the level of digital literacy and staff culture			…	…	…
	2.2.5. Availability of security documents (patents, copyright certificates, etc.)			…	…	…
2.3.	Determination of strategic development goals			…	…	…
2.4.	Strategic positioning of the institution			…	…	…

Continuation of Table 4.4

1	2	3	4	5
2.5	Comparative analysis of prerequisites of resources and consequences of choosing an alternative strategy	…	…	…
2.6	Forming a package of projects on adaptation, prevention, and resistance to challenges and threats	…	…	…
2.7	Documenting the adopted strategy and projects for anticipating current and new challenges and threats	…	…	…
2.8	Monitoring the implementation of the strategy of adaptation, prevention, resistance to challenges and threats	…	…	…
2.9	Evaluation and control of the actual results of implementation of adaptation, prevention, resistance to challenges and threats	…	…	…
3.	Conclusion	The level of adaptation of the health care institution's development strategy to current and new challenges and threats		… …

It is recommended to form an adaptive strategy of health care institutions in the conditions of new challenges and threats as a component of the general strategy of the institution's development.

Along with this, the basic requirements for the development of a new strategy for the development of health care institutions in the conditions of new challenges and threats are proposed (Fig. 4.14).

When forming a new strategy for the development of health care institutions in the face of new challenges and threats, the management needs to establish the extent to which the existing organizational structure corresponds to the strategy, and if necessary, make appropriate changes.

The head of a health care institution must orientate himself in the new basic needs of the enterprise, on which the further management of the development strategy depends.

At the same time, the effectiveness of managing the sustainable development of health care institutions depends to a large extent on the organizational structure used, which is considered as a set of organizational elements (positions and structural units) and the relationships between them. Connections between positions and structural subdivisions can be

vertical (administratively functional) or horizontal, along which technological processes flow.

Figure 4.14 – Recommended basic requirements during the development of a new strategy for the development of health care institutions in the context of adaptation to challenges and threats (adapted from (Tolstykh, 2015))

The organizational structure of health care institutions can be considered as a form of system management, which determines the composition, interaction and subordination of its elements using linear, functional and inter-functional ties in the process of communication. It is also a set of production links and ordered flows of resources in the production system, as well as management bodies and their certain relationship, which ensure the achievement of the strategic goals of the enterprise.

Resources are factors and the basis of providing medical services in health care institutions. Economic resources are understood as all types of resources that are used or can be used in the process of providing services in health care institutions. The consolidated and generalized classification of economic resources includes the following types: natural resources, labor resources, resources created by human labor (machines, equipment, tools, buildings, structures, intra-production means of communication, warehouses), financial resources, entrepreneurial abilities, knowledge.

Currently, knowledge and entrepreneurial abilities are increasingly not considered economic resources, but are separated into the category of competencies, which are an important condition for the functioning and

development of health care institutions. Competence is the ability to apply knowledge, skills, and personal qualities for the successful operation of health care institutions in the face of challenges and threats.

Note that the resources of health care institutions are related to the availability of assets, and competencies are related to the performance of actions. Competencies also differ from resources in that they develop as they are used.

The organizational structure of health care institutions, which is oriented towards sustainable development, should be designed and created based on the theory and practice of project management. According to this theory, it should be based on the division of labor, namely vertical (functional-administrative) division of labor and horizontal (project-target). At the same time, the "vertical" division of labor does not mean the traditional consideration of the organization by hierarchical levels, but participation in various vertical management processes and management functions. The "horizontal" division of labor refers to the structure of the organization's employees depending on their participation in horizontal technological processes of work performance.

We recommend the signs of an optimal organizational structure for health care institutions: 1) controllability, that is, the ability to quickly and clearly respond to direct directives from above; 2) adaptability, that is, the timeliness of the company's response to change; external conditions, the ability to adjust strategy and tactics to changes in external and internal conditions; 3) specialization, i.e. division of labor by functions-operations; 4) cooperation, i.e. execution of the maximum range of work on the manufacture of the product in one structural subdivision; 5) minimum size of structural subdivisions; 6) minimum number of management levels; 7) high labor productivity and low direct costs; 8) prevention of duplication of employee functions; 9) high quality of services and continuity of communication with the consumer of services (Tolstykh, 2015).

Many specialists in their research distinguish between long-term, short-term and operational planning according to the levels of the organizational structure at which it should be carried out. If we adapt this to the organizational structure of health care institutions, then it is necessary to delegate the preparation of short-term operational goals and plans to the lower echelon of executors, medium-term plans to department heads and chief specialists in the profile, and long-term planning should be undertaken by the top management of the hospital.

When involving external specialists in forming the development strategy of health care institutions, in our opinion, a mandatory condition is the opportunity for hospital employees to participate in the formation of operational goals. The task of senior management is to make the strategy formation process accessible and understandable for employees of health care institutions, to promote their maximum involvement in the development of the strategy, since its understanding by all employees affects the final result.

Sometimes it makes sense for the top management of health care institutions to use the services of external consultants, which has its advantages, because they are subject to increased requirements, they must have in-depth knowledge of the theory and practice of internal corporate planning, and have experience in performing similar work. Among the duties of consultants: conducting trainings and advising senior management on planning issues; organizing planning meetings and summarizing their results; recommendations for keeping planning documentation; preparation of decisions on strategy development and implementation. But there is a drawback, they are not responsible when their recommendations do not produce the desired result. Heads of line units are also not responsible for the implementation of a strategy not formed by them. Conversely, they bear personal responsibility if the choice and implementation of the strategy is part of their functions.

The need to involve consultants and their role are determined by various factors: 1) the size of the enterprise; 2) the scale of the expected changes.

In the conditions of a changing external environment, in our opinion, the involvement of external consultants is necessary, especially if the management chooses a strategy for developing health care institutions, the ultimate goal of which is a radical change in many areas of activity. The more global changes the management envisages, the more necessary it is to involve specialist consultants.

In modern economic conditions, the need to introduce a cyber security department during the formation and monitoring of the implementation of strategies for developing health care institutions is increasingly becoming necessary.

Management should determine the general goal of health care institutions and the main ways to achieve them. Heads of divisions, i.e. middle and lower ranks, and specialists of divisions develop operational plans. Specialists' duties may include analysis of the internal and external environment of the hospital, preparation of forecasts and development

scenarios. In the event that a health care institution chooses a diversification strategy, the management should conduct a selection of personnel, together with top management, who are qualified and competent in the new chosen field of activity.

When adapting the organizational structure of health care institutions to the chosen strategy, top management should pay attention to organizational culture, that is, as a system of collective basic ideas acquired by the group when solving problems of adaptation to the external environment and internal integration, which have proven their effectiveness and therefore, they are considered as a value and are transferred to new members of the group as a correct system of perception, thinking and feeling regarding the mentioned problems.

Changing the organizational culture to align with the company's strategy is one of the most difficult tasks facing the top management of healthcare institutions. Any changes that conflict with the organizational culture are met with resistance, and vice versa: actions consistent with the culture are accepted more readily. Culture change measures include: revising general approaches and procedures, revising the motivation system, openly praising employees who support the new culture, hiring new managers and employees who possess the necessary characteristics and can serve as role models for others, replacing key managers who are unwilling parting with the old culture, constantly explaining to the workers the necessity and expediency of changing the culture.

An important issue is the selection of the team, the determination of the requirements for each of its members, their arrangement, the availability of each employee with the appropriate competencies and abilities, the adoption by each of the culture and goals of health care institutions and the chosen strategy for its achievement.

Therefore, implementing the strategy for the development of health care facilities is not a logical and immediate consequence of its development, as it requires strategic transformations in the organizational structure and organizational culture. Changes can usually cause resistance in health care institutions; this problem deserves attention along with the formation of the development strategy itself. Along with establishing the correct structural interrelationships in the activities of health care institutions, it is necessary to think through different ways of reducing resistance to changes in each specific case. So, we presented the main principles of building an organizational structure or adjusting it in accordance with the new chosen strategy for health care institutions. So, the author improved the scientific and methodological support for the process

of development and implementation of the institution's development strategy in the context of its evaluation and proposed basic requirements for the development of a new strategy for the development of health care institutions.

"All health care institutions, regardless of the form of ownership, that conduct medical practice, will soon work in the electronic health care system. The Cabinet of Ministers of Ukraine adopted the relevant resolution on issues related to economic activity in medical practice. This document changes the Licensing Conditions for conducting business activities in the field of medical practice, in particular, a mandatory requirement is added regarding the registration of institutions in the central database of the Unified healthcare system and the maintenance of electronic medical records by all providers of medical services. The corresponding norm will apply to both public and private health care institutions. Regardless of whether the establishment is already engaged in a similar type of activity or is getting a license for the first time. In other words, all healthcare facilities in Ukraine will maintain medical records in an electronic database and registers" (All health care institutions, 2022). Therefore, the organization of electronic document flow should become a reliable basis for the effective implementation of the development strategy of health care institutions. The management of (Snegiriev, 2017):

– information about personnel: registers of medical institutions and medical workers, records of qualifications, working hours and performance;

– information about patients: a single electronic medical record for all institutions, patient registers;

– treatment process: appointment of studies and procedures, control of compliance of medical tactics with clinical recommendations and protocols, control of results and reporting;

– resources: efficiency of personnel and equipment, personalized accounting of drug and material write-offs by patients and units, pricing control, income and expenses

The content of a unified information platform in the field of electronic document management and informatization of health care institutions should contain 6 main components: electronic register of patients; electronic medical record; management of circulation of medicines; secure access system; patient's office; telemedicine (Fig. 4.15).

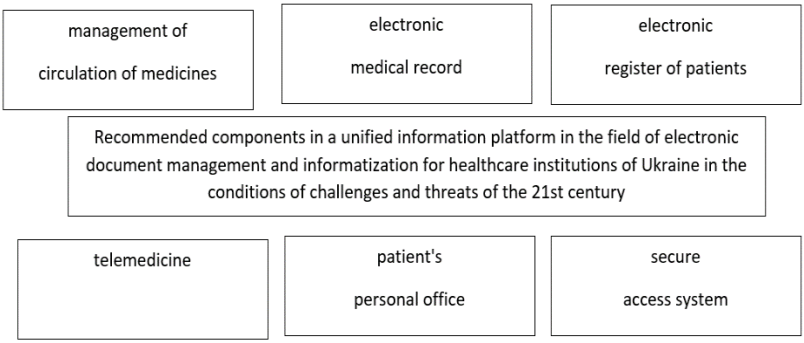


Figure 4.15 – Components in a unified information platform in the field of electronic document management and informatization for health care institutions of Ukraine (constructed by the author based on (Snegiriev, 2017))

There is a need to reveal in detail the content of each component of the information platform in the field of electronic document management and informatization of health care institutions:

1) The electronic register of patients of health care institutions should ensure the systematization of medical data in one electronic archive, the introduction of electronic document circulation between all medical and preventive departments. In order to create local electronic registers of medical and preventive care institutions, the procedure for making records and storing information about patients should be standardized.

Please note that patients of health care facilities may be under the supervision of more than one doctor or clinic. Therefore, they can be included in the electronic register of various medical and preventive institutions many times.

The priority task should be constant correction and updating of the electronic register of patients of health care institutions who were under supervision, died or are no longer served by the medical institution. In addition to standardization of the order of execution of records and storage of information, local electronic registers of patients of health care institutions require standardization of data collection.

Given the fact that the industry reform program should include the exchange of data between medical institutions, this will help monitor the movement of patients in health care institutions and predict the workload of medical institutions, increase the level of decision-making in the treatment

of patients or for conducting relevant research. At the same time, data exchange will take place with the help of local electronic registers of medical institutions.

Thus, the electronic register of patients in health care institutions is a single information system for collecting, accumulating, storing, updating, using and transferring information about the patient and the medical care he received. The register is an information resource that is maintained using the latest information protection technologies, electronic document circulation and electronic digital signature. The database of electronic medical records of patients, which contains medical information about the patient, the history of his diseases, appeals to medical institutions, etc., should become the basis of the register of health care institutions.

Creating a register of patients should ensure health care institutions: a) registration of patients with the assignment of a single serial number with online access; b) access to the patient's record for registered users of the system; c) data import into the patient card from existing information systems; e) a filter for selecting patients according to certain characteristics, for example, according to nosological units; g) cloud storage of medical information (analyses, data on the treatment performed); h) authorized access with triple identification and encrypted data storage — comprehensive protection of personal data.

It is worth noting that the main purpose of a patient's personal office in health care facilities should be the patient's remote access to private medical data, and the main features are synchronization with the medical database (all private medical information is available to the patient in his personal office; storage of the entire medical history patient (history of all diseases, results of laboratory examinations, vaccinations, etc.); the possibility of using a personal calendar of examinations and vaccinations with notification of the date of the next visit; the possibility of viewing your information and attaching files with examinations; providing access to the patient’s personal office to other doctors for additional consultations, etc.

2) The electronic medical record should accumulate and store information about the patient with online access, monitor and manage the health of patients in health care institutions.

3) Management of the circulation of medicines and medical devices, among other things, will allow personalized accounting of medicines in the activities of health care institutions. At the same time, the circulation of medicinal products must have an addressable purpose and use of medicines, forming an application for purchase. Thus, the management of

the purchase of medicinal products includes: a) accounting of purchases in terms of suppliers and contracts with counterparties; b) registration and control of the manufacturer's actual selling prices.

Stock management in the pharmacy of health care facilities should include:

a) accounting for movement of the nomenclature of pharmacy goods by series, expiration dates, batch documents for each nomenclature item;

b) analytical accounting of medicinal products by formal characteristics (active substance, trade name, etc.) and by belonging to lists (narcotic, psychotropic, etc.);

c) accounting for the movement of medicinal products in warehouses and storage locations within the warehouse (quantitative).

Management of drug stocks in health care facilities should include:

a) automated accounting and various options for registration of disposal of pharmaceutical goods in medical institutions;

b) registration of the requirements of medical institutions according to the formal characteristics of the medicinal product (by active substance, trade name, etc.);

c) personalized prescription of medicines on the patient's medical card in accordance with the doctor's prescription.

4) The patient's personal office in health care institutions must provide him with access to all his personal medical information, and also allows him to keep a personal calendar of examinations, vaccinations, etc.

5) Telemedicine in the activities of health care institutions will make it possible to organize remote description and examination of research, consultation of specialists in real time for receiving not only emergency and outpatient care, but also consultation of the patient with specialists in the planned period.

6) The secure access system should provide for secure user identification, encryption of data during their transmission and storage, personalized accounting of the actions of all users of health care facilities.

Therefore, we recommended the implementation of measures for the digitization of document flow in health care institutions as a direction for the implementation of its development strategy, in particular, the content of the information platform in the field of electronic document flow organization and informatization of health care institutions was revealed.

Along with this, the implementation of measures to digitize the document flow management of health care institutions requires the adaptation of the organizational structure to this procedure, which requires the creation of a process support department and the provision of an appropriate level of communication, information and cyber security. Thus,

it is recommended to increase the level of security of institutions by improving the organizational structure in the context of creating the sector of communication, information and cyber security of health care institutions (Fig. 4.16).

In addition, health care personnel should develop a Cyber Hygiene Guide and follow certain rules or 7 steps to improve data protection, which, together with a planned increase in digital education, will prevent and minimize new and current threats (Fig. 4.17).

Thus, the author has developed proposals for the implementation of measures to digitize the document flow in health care institutions as a direction for the implementation of its development strategy. Thus, the content of the information platform in the field of electronic document management and informatization of health care facilities in the context of new challenges and threats has been disclosed.

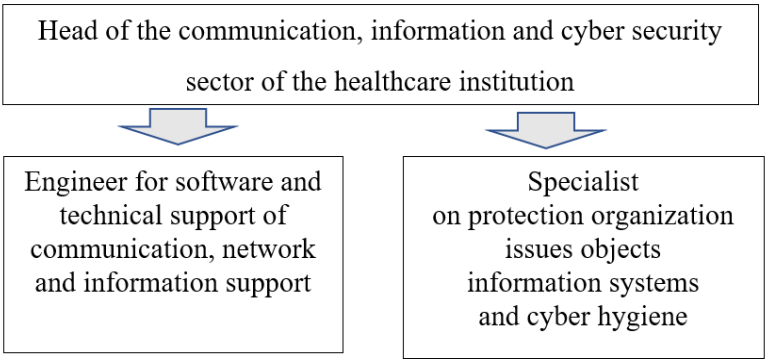
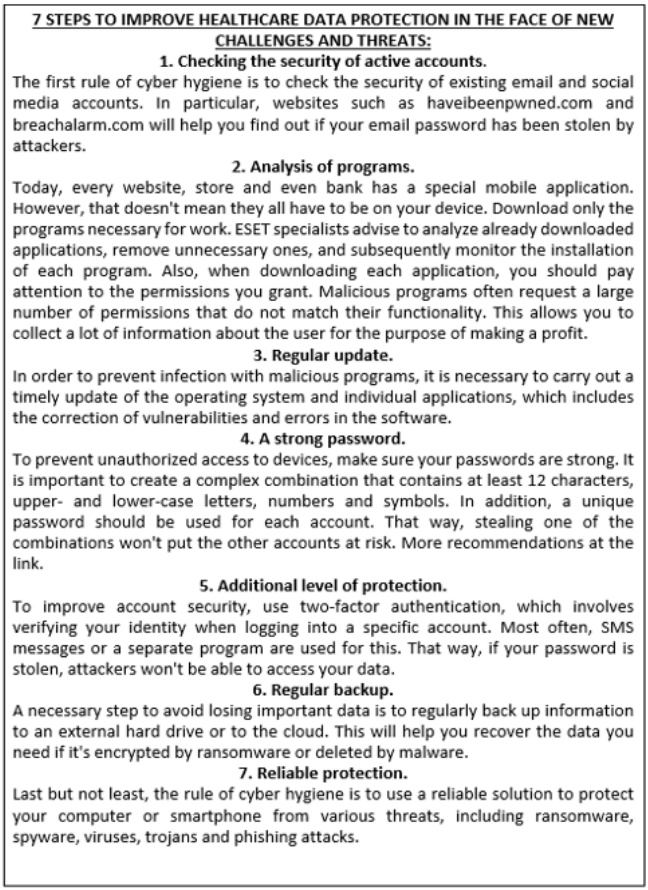


Figure 4.16 – The proposed sector of communication, information and cyber security of the organizational structure for health care institutions of Ukraine in conditions of challenges and threats

At the same time, it is recommended to increase the level of security of the institution by improving the organizational structure of management in the context of creating the sector of communication and information and cyber security of the hospital, and also it is proposed to use the instruction on cyber hygiene for the personnel of health care institutions in the conditions of new challenges and threats.

In the conditions of the need to confront new challenges and threats, the introduction of telemedicine into the practice of health care institutions

as a way of implementing its development strategy is becoming extremely urgent.



7 STEPS TO IMPROVE HEALTHCARE DATA PROTECTION IN THE FACE OF NEW CHALLENGES AND THREATS:

1. Checking the security of active accounts.

The first rule of cyber hygiene is to check the security of existing email and social media accounts. In particular, websites such as haveibeenpwned.com and breachalarm.com will help you find out if your email password has been stolen by attackers.

2. Analysis of programs.

Today, every website, store and even bank has a special mobile application. However, that doesn't mean they all have to be on your device. Download only the programs necessary for work. ESET specialists advise to analyze already downloaded applications, remove unnecessary ones, and subsequently monitor the installation of each program. Also, when downloading each application, you should pay attention to the permissions you grant. Malicious programs often request a large number of permissions that do not match their functionality. This allows you to collect a lot of information about the user for the purpose of making a profit.

3. Regular update.

In order to prevent infection with malicious programs, it is necessary to carry out a timely update of the operating system and individual applications, which includes the correction of vulnerabilities and errors in the software.

4. A strong password.

To prevent unauthorized access to devices, make sure your passwords are strong. It is important to create a complex combination that contains at least 12 characters, upper- and lower-case letters, numbers and symbols. In addition, a unique password should be used for each account. That way, stealing one of the combinations won't put the other accounts at risk. More recommendations at the link.

5. Additional level of protection.

To improve account security, use two-factor authentication, which involves verifying your identity when logging into a specific account. Most often, SMS messages or a separate program are used for this. That way, if your password is stolen, attackers won't be able to access your data.

6. Regular backup.

A necessary step to avoid losing important data is to regularly back up information to an external hard drive or to the cloud. This will help you recover the data you need if it's encrypted by ransomware or deleted by malware.

7. Reliable protection.

Last but not least, the rule of cyber hygiene is to use a reliable solution to protect your computer or smartphone from various threats, including ransomware, spyware, viruses, trojans and phishing attacks.

Figure 4.17 – Recommended instruction on cyber hygiene for the personnel of healthcare institutions of Ukraine in the conditions of challenges and threats (adapted by the author based on (Basic rules of data protection, 2019))

Telemedicine (from the Greek tele – distance, Latin meder – treatment) is a field of medicine, namely a complex of actions, technologies and measures used in the provision of medical care, using means of remote

communication to exchange information (in cases when distance is a critical factor) (Telemedicine, 2023).

In addition, the telemedicine direction includes digital education of doctors and patients, medical information services and self-service through digital communication technologies.

For the first time in Ukraine, telemedicine was applied in 1935 in Lviv, when Professor Maryan Franke and Professor Vitold Lypynskyi organized the permanent use of teleelectrocardiography (tele-ECG). "During the last 2 years, teleelectrocardiographic examinations were systematically conducted in the Department of Infectious Diseases of the State General Hospital in Lviv. The patients were in the department, and the results of heart examinations were transmitted 500 meters to the Institute of Pathology. These examinations were carried out together with Professor Franke" (Telemedicine, 2023).

It makes sense to apply similar experience to health care institutions in the conditions of the COVID-19 pandemic and the wartime economy.

At the same time, the goal of telemedicine in health care institutions should be to improve the health of the population by ensuring equal access to medical services of appropriate quality in the face of new challenges and threats.

The subject of telemedicine in healthcare institutions is the exchange of all types of medical information between remote points based on telecommunications and computer technologies. At the same time, this exchange process must take into account the type of information that is transmitted and the method of its transmission.

Clinical, organizational-administrative, preventive, educational, and scientific telemedicine functions in health care institutions should be included.

The main tasks of telemedicine in health care institutions should be to ensure the provision of quality medical care to the patient, when distance or a threat to other people becomes a critical factor in its provision, as well as to promote the optimization of the processes of organization and management of health care.

The main method of telemedicine in health care institutions should be telemedical consultation by the patient's doctor. The main tools of telemedicine in health care institutions should include:

– telemedical consultation, i.e. providing medical assistance to a patient by a doctor using telemedicine;

– telemedical consultation, i.e. providing medical assistance to a patient with the involvement of several doctors in complex cases of diagnosis, treatment or operations, to transfer experience.

– telemetry, i.e. a set of technologies that will allow remote measurement, collection and transmission of information about activity indicators (physiological parameters) of the patient's body;

– home teleconsultation, that is, the process of monitoring the patient's health outside the health care facility, using telemedicine.

The author has proposed the stages of conducting telemedical consultations for health care institutions of Ukraine as a factor in countering threats of the 21st century (Fig. 4.18).

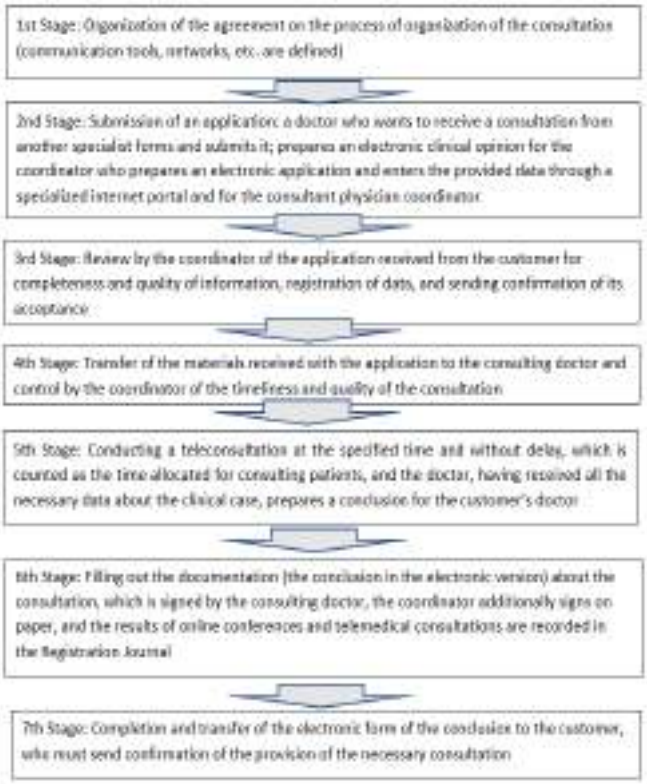


Figure 4.18 – Stages of conducting telemedical consultations for health care institutions of Ukraine as a factor in countering threats of the 21st century (compiled by the author based on (Telemedicine as a healthcare, 2020).

Therefore, telemedicine in health care institutions should become a powerful tool not only for improving the quality of medical care, but also for optimizing and improving the efficiency of its management system. At the same time, it is important to ensure interaction between the levels and stages of medical care.

In order to justify the feasibility of implementing the "Telemedicine" project in certain departments of health care institutions, for example, allergology and endocrinology, we will calculate its basic performance indicators - profitability index, payback period and internal profitability rate. Let's summarize the data for calculating the effectiveness of the "Telemedicine" project in the departments of endocrinology and allergology in health care institutions of Ukraine for 2023 in Table 4.5 (Telemedicine as a healthcare, 2020).

The initial data for calculating the effectiveness of the "Telemedicine" project in the departments of endocrinology and allergology in health care institutions of Ukraine for 2023 are presented in Tables 4.6, 4.7.

For objective calculations, we will use the discount rate of the National Bank of Ukraine for December 9, 2016 and January 27, 2017 – 14% per annum. We will evaluate the effectiveness of the implementation of a promising investment project. After the calculations, we will receive initial data that allow us to talk about the feasibility of implementing our investment project. So, the profitability index is 2.03 (PI = 2.03), the payback period is 1 year (PP = 1 year), and the internal rate of return is 42% (IRR = 42%).

In this way, it is substantiated the expediency of implementing telemedicine as a direction of implementing the development strategy in the activities of health care institutions of Ukraine. The advantages, tasks and tools of telemedicine are highlighted to prevent and minimize internal and external threats. The stages of conducting telemedical consultations in health care institutions as a factor in countering threats in the 21st century are recommended.

Based on the evaluation of the economic efficiency of the developed investment project, a conclusion was made about the expediency of its implementation in the activities of the medical institution in the allergology and endocrinology of health care institutions of Ukraine.

Thus, the measures developed and proposed by us will contribute to increasing the efficiency of the development and implementation of the

development strategy of health care institutions of Ukraine in the conditions of new challenges and threats.

Table 4.5 – Input data for calculating the effectiveness of the "Telemedicine" project for departments of endocrinology and allergology in health care institutions of Ukraine for 2023

List of necessary equipment	**Cost, UAH**
Income from project implementation	10, 000 person x 200 UAH= 2,000,000
Salary expenses	240,000
Equipment costs:	316,967
Personal computer with multimedia, one monitor	5,000
Webcam – 1	4,500
Uninterruptible power supply unit – 1	5,920
Digital camera – 1	9,700
Tablet scanner – 1	3,057
Laser printer – 1	4,560
Telemetry means – 1	110,000
Phone – 1	8,555
Computer table – 1	3,700
Office chair – 2	1,065
Software / Operating system – 1	5,500
Software / Office – 1	2,200
Software / Application for telemedicine – 1	152,910
Software / Antivirus – 1	300
Advertising	10,000
Total costs:	566,967
Discount rate	25%
Average profit per year, hryvnias	1,433,033

Table 4.6 – Initial data for calculating the effectiveness of the "Telemedicine" project for endocrinology and allergology departments of healthcare institutions of Ukraine for 2023

Indicators	Price
The amount of investment funds in the project, UAH	600,000
Prospective period of operation of the investment project, years	2
Amount of cash flow – total, UAH	1,690,978.94
including: 1st year	845,489.47
2nd year	845,489.47

Based on the evaluation of the economic efficiency of the developed investment project, a conclusion was made about the expediency of its implementation in the activities of the medical institution in the departments of allergology and endocrinology of health care institutions of Ukraine.

4.5. Improvement of the quality management system of medical services (on the example of the municipal non-profit enterprise "Consultative and diagnostic center" of Holosiivskyi district of Kyiv)

The quality of medical care and its accessibility depends not only on the adequacy of the organizational form and the state of the material and technical base of health care, but also on the availability of qualified personnel to a large extent. Staff with specialized knowledge and the effectiveness of healthcare management systems. Management of a healthcare facility is a complex process based on choosing the best solution, while constantly taking into account the internal problems of the organization and the changing economic and political situation. The process should be approached from the point of view of the wishes and personal interests of the staff. The chosen topic is relevant due to the lack of quality management and the prerequisites for reducing the quality of medical services provided to the population, which will negatively affect the salaries and social climate of the staff, as well as the image of the medical institution. Having studied the problems of ensuring the quality of medical services on the example of the Municipal Nonprofit Enterprise "CDC" of Holosiivskyi district of Kyiv, it is worth noting that the low availability of medical services is mainly due to the disproportionate availability of quality medical care in Ukraine. According to surveys, almost every member of every second family needs medical care but does not receive it. The problem of staffing in the domestic healthcare system is caused by the country's ineffective personnel policy for the industry. For example, district doctors are paid a salary that does not depend on the quality of their work and the number of services they provide, so they are not interested in improving their skills. In addition, the aging of the workforce and the deterioration in the quality of medical training have led to a negative staffing balance due to the insufficient number of qualified young professionals entering the medical field.

Thus, in response to the above shortcomings, it is necessary to take the following important measures to improve the efficiency of medical services

1) introduction of modern medical and technological technologies;

2) protecting the interests of patients and healthcare professionals;

3) creating incentives for healthcare workers and healthy working conditions.

Implementation of these measures will help to increase the efficiency of the formation and implementation of state programs for preserving and improving the health of Ukrainian citizens, increasing their life expectancy and increasing the population of Ukraine.

The purpose of this study is to theoretically substantiate and develop proposals for improving the quality management system of medical services (on the example of the municipal non-profit enterprise "Consultative and Diagnostic Center" of Holosiivskyi district of Kyiv). To achieve this goal, the following tasks were set:

– to consider the current state and peculiarities of the quality of medical care;

– to systematize the main problems of ensuring the quality of services in the medical sector of Ukraine;

– to analyze the activities of the municipal non-profit enterprise "Consultative and Diagnostic Center" of Holosiivskyi district of Kyiv;

– to formulate proposals for identifying ways to improve the quality management system of medical services (on the example of the municipal non-profit enterprise "Consultative and Diagnostic Center" of Holosiivskyi district of Kyiv).

The subject of the study is the system of quality management of medical services (on the example of the municipal non-profit enterprise "Consultative and Diagnostic Center" of Holosiivskyi district of Kyiv).

The theoretical and methodological basis for the implementation of the research goal was general scientific and special methods: abstract and logical - in the process of analyzing the activities of the Municipal Nonprofit Enterprise "CDC" of Holosiivskyi district of Kyiv; analysis and synthesis – to determine the current state and features of the quality of medical care, historical – made it possible to study and introduce ways to improve the quality management system of medical services to the population; Prognostic, which provides forecasting, generalization of independent characteristics of the developed materials for drawing conclusions, suggestions on improvement of quality management of

medical services rendered by the KNU “KDC” Holosiyiv district of the city Kiev.

The scientific novelty of the obtained results is to substantiate the directions of improving the quality management system of medical services (on the example of the municipal non-profit enterprise "Consultative and Diagnostic Center" of Holosiivskyi district of Kyiv).

The practical significance of the results obtained is that the formulated theoretical provisions, conclusions and proposals may be useful to specialists and scientists who, in the field of Public Administration and Management, solve the complex problem of improving the quality management system of health care services.

According to the law of Ukraine in the field of health care – "Fundamentals of Legislation of Ukraine on Health Care", the basis of the state health care policy is formed by the Verkhovna Rada of Ukraine. The formation of such policy is carried out by consolidating the constitutional and legislative foundations of health care, defining its purpose, main tasks, directions, principles and priorities, establishing standards and volumes of budget financing, creating appropriate credit and financial, tax, customs and other regulators, approving national programs in the field of health care (Zakon Ukrainy, 1992). According to Article 14 of the aforementioned law, the implementation of the state health care policy is entrusted to the state executive authorities. Thus, the competence of the Cabinet of Ministers includes the development and implementation of state targeted programs, creation of economic, legal and organizational mechanisms that stimulate effective activities in the field of health care; ensuring the development of a network of health care institutions; concluding intergovernmental agreements and coordinating international cooperation on health care; as well as, within its competence, the exercise of other powers vested in state executive authorities in the field of health care (Zakon Ukrainy, 1992).

The main reasons for the problems in the national health care system are insufficient funding of the sector, combined with unstable and sometimes insufficient public administration and legal regulation. Thus, the level of medical security for the population is still uncertain, and shadow medical payment methods are widespread. The priority of solving the main tasks of the health care system raises the issue of developing recommendations for improving the organizational forms of management of the industry and mechanisms for legal support of its progressive development before the science of public administration (Ustymchuk, 2018). The main law of Ukraine in the field of health care – "Legislative

basis of health care in Ukraine" is essentially a framework regulatory act, not a law of direct effect. It defines only four terms, namely: "health," "health care," "health care institutions," and "medical care," meaning that it contains insufficient conceptual tools (Zakon Ukrainy, 1992). Although one of the main tasks of legal regulation of the healthcare sector is to define the powers of the state, public and private sectors in the system, the law does not actually regulate relations between individuals and legal entities of different forms of ownership.

The Law of Ukraine "On Protection of Consumer Rights" should be fully applied to legal relations in the health care system (Zakon Ukrainy, 1996). However, when analyzing this law, it should be clarified that it does not take into account the fact that practical medicine is not an activity based on exact science, and health as an object of medical activity significantly distinguishes a medical service from other professional services. Thus, in general, the law under analysis applies to any relationship involving consumers without affecting the very nature of professional medical practice (Zakon Ukrainy, 1991).

Medical quality control is carried out by applying methods of external and internal quality control of medical services. Internal quality control of medical services is carried out by the management of healthcare institutions, and external quality control of medical services is carried out by the state administration. Quality control in healthcare is carried out in terms of the following components: structure, process and results of medical care; organization of medical care; control over the implementation of management decisions; compliance with qualification requirements for medical personnel, including heads of healthcare institutions; studying patients' opinions on the medical services provided; ensuring the rights and safety of patients during the provision of medical care. As the analysis of the main legal acts in Ukraine in the field of healthcare regulation shows, its regulatory framework needs to be updated, and the healthcare system itself needs a serious transformation towards strengthening the subject and social responsibility. To a large extent, this is due to the lack of a certain political consensus on the changes envisaged by Article 49 of the Constitution of Ukraine (Koroviak, 2018). It declares that medical services are unlimited and free of charge, and that it is impossible to reduce the medical infrastructure that provides such services. Because of this, Ukraine still does not have a clear definition of the scope and limits of state guarantees of free medical care to citizens.

In today's environment, the Ukrainian healthcare system is in crisis, largely due to underfunding. Although budgets at all levels have increased spending on healthcare, they still do not meet the minimum functional needs, with a funding gap of 1/3 of what the industry needs to survive. As a result, the physical base of medical institutions is degrading, the quality of medical services is decreasing, and most importantly, the population's access to medical services is decreasing (State Budget-2023, 2022). The total state expenditures on healthcare in 2023 amounted to UAH 176.9 billion (Table 4.7), which is 6.8% of all funds. The share of healthcare expenditures in the state budget decreased compared to the previous year, due to an increase in total expenditures on security and defense. As a percentage of GDP, healthcare spending decreased to 2.8%, bringing Ukraine back to the level of 2019.

Healthcare spending fell by 10% in local currency compared to the previous year. However, in dollar terms, the decline was more significant, by almost 40%. This figure more accurately reflects the goal of full healthcare coverage next year. It is estimated that total public health expenditures per capita will decrease from $159 to $116 in 2023 compared to the previous year. This figure is low compared to neighboring EU member states. The largest item of healthcare spending in the state budget is the Medical Guarantee Program (MGP). UAH 142.7 billion is allocated for its implementation in 2023 (the budget of the MHG-2022 is UAH 157.3 billion).

The healthcare budget for 2023 has minor changes compared to the budget for 2022. The 10% reduction is roughly comparable to the cuts in other programs (except for security and defense). Per capita spending in hryvnia terms will even increase, given the decline in Ukraine's real population. A large part of direct healthcare expenditures is spent on medicines and medical equipment. Combined with changes in exchange rate differences, prices for imported medicines will increase significantly, which may reduce the ability of citizens to purchase necessary medicines. According to World Bank estimates, the poverty rate in Ukraine is expected to increase significantly, from 5 percent in 2021 to 25 percent by the end of 2022. Consequently, the vulnerability of the population to financial costs associated with treatment will increase significantly. Significant reduction in funding for the National Health Service of Ukraine (NHSU), which is the healthcare service customer and responsible for strategic procurement under the PFM, and thus controls the work of healthcare providers under the terms of the contract for healthcare services to the population. In 2023,

the agency will receive the lowest funding in its history - only 0.13% of the total volume of the UHI.

This is happening against the backdrop of a loss of ability to perform its core functions due to the massive outflow of competent personnel in key positions. During 2022, the key function of the PMG management was decapitated vertically: the image vice-rector of the NHSU, the acting director of the specialized department, her chief deputy and two heads of the most critical departments. The second most important function, the control function, lost its head, and the department itself was structurally transferred to the management (Medical web portal, 2023).

Table 4.7 – Expenditures for the Ministry of Health of Ukraine envisaged by the State Budget of Ukraine for 2023 and comparison with the budget of 2022 (formed by the author based on (Medical web portal, 2023))

Names according to departmental and program classifications of state budget expenditures and crediting	**2023, UAH million**	**2022, UAH million**	**Growth rate/reduction rate decrease, %, in**
Ministry of Health of Ukraine	174,898.7	194,395.9	–10
Apparatus of the Ministry of Health of Ukraine	31,870.2	36,679.1	–13.1
National Health Service of Ukraine	142,928.8	157,593.6	–9.3
State Service on Medicines and Drugs Control	99.7	123.1	–19
Ministry of Health of Ukraine (general government expenditures and lending)	2,034.5	2,431.2	–16.3
Total	176,933.2	196,827	–10.1

Therefore, measures should be taken to restore the capacity and human potential of the NZSU to perform its critical functions, as well as to provide additional funding, for example, from an international assistance fund. It is recommended that the level of funding for the institution be determined as a percentage of the PMG (at least 0.5%). Health care policy should be based on the rational use of resources. To this end, it is especially necessary to restore the "money that comes from the patient" model (except

for medical institutions located in areas of active hostilities or in the newly liberated territories).

It is also necessary to start actively forming a network of competent medical institutions, integrating them into the city, in particular through the creation of regional medical associations or other forms of unification of medical institutions. Consolidation of health care facilities can be a way to save money and solve problems related to limited resources (money, medicines, doctors, generators, etc.).

In order to provide qualified professional assistance to the residents of Holosiivskyi district, the Kyiv City Council decided in 2013 to establish a municipal non-profit enterprise, the Consultative and Diagnostic Center, at 59/A Holosiivskyi Lane. Thus, a single medical institutional space was actually created for patients. Specialists of the Consultative and Diagnostic Center of the Holosiivskyi District of Kyiv provide counseling, emergency medical care, diagnosis and treatment of diseases, injuries, poisonings, pathophysiological conditions, and preventive measures (Lozova, 2023). The company has 4 branches that provide medical care to residents of the Holosiivskyi district of Kyiv and residents of other regions of Ukraine.

The Consultative and Diagnostic Center of the Holosiivskyi District of Kyiv provides patients with quality medical care and diagnostic examinations. It conducts consultative and diagnostic appointments for outpatients with acute diseases, exacerbation of chronic diseases and chronic pathology. Medical care is provided by doctors of the following specialties: cardiologists, rheumatologists, neurologists, endocrinologists, infectious disease specialists, gastroenterologists, surgeons, orthopedic traumatologists, otolaryngologists, urologists, oncologists, dentists, allergists, physiotherapists, therapists and pediatricians and children's specialists.

The laboratory service of the CDC has clinical and bacteriological laboratories that perform a wide range of diagnostic tests: general clinical, hematological, immunobiological, biochemical, cytological, and bacteriological. The Center also has one trauma center at 59A Holosiivskyi Avenue, where victims receive first aid. According to the records of patient visits for the period from 01.12.2022 to 01.01.2023, 30955 people sought medical care, including 3253 children aged 0-17 years (Table 4.8). About 84 of them were consulted by means of communication abroad. The largest number of patients was received by Branch No. 3 – 8,743 people, including 1,159 children aged 0-17, 24 of whom were consulted by means of communication.

The doctors of the MCC staff the medical commission of the Holosiivskyi District Military Commissariat, which carries out medical examinations of reservists liable for military service. All examination methods, including laboratory and instrumental ones, are provided free of charge. "The Consultative and Diagnostic Center is recognized as a basic institution for processing and sending the necessary medical documents to the MSEC for victims of mass actions in all regions of Ukraine. One of the preventive activities of the CDC is to provide medical care to privileged groups of the population (disabled people and participants of war, military operations and those equated to them, victims of the Chernobyl accident). IDPs from the temporarily occupied territories and victims from the areas of hostilities are also not excluded (Lozova, 2023).

Table 4.8 – Accounting of patient visits for the period from December 01, 2022 to January 01, 2023 (formed by the author using the data from (Lozova, 2023)

Subdivision	Number of visits	Number of visits by children aged 0-17	Number of consultations by phone	Number of consultations by phone for children aged 0-17	Number of home visits	Number of home visits to children aged 0-17
Branch№1	1,499	1,488	0	0	0	0
Branch №2	2,027	36	2	0	82	0
Branch №3	8,743	1,159	24	3	2	0
Branch №4	2,847	257	4	0	4	0
Municipal enterprise "KDC" in Holosiivskyi district of Kyiv	5,599	57	2	0	0	0
Direct subordination	10,240	256	52	0	8	0
Total:	30,955	3,253	84	3	96	0

It is important to emphasize that despite the difficult political and military situation, the health and well-being of the population must remain the main priority for the Ukrainian state and society.

Providing medical care at KNP "KDC" is a big step forward in ensuring proper health care for citizens, despite the state of war. Expanding

services and involving foreign partners and specialists are important measures to ensure proper medical care.

Improving the system of quality control of medical services is an important element of medical reform, as it will help ensure the proper provision of medical care to the population. In this context, the development of modern methods of quality control organization is an important task. The quality of medical services depends on many factors, including the qualifications of medical workers, the availability and quality of medical equipment and equipment, as well as the conditions under which they are provided.

If the patients' feedback on the provision of medical services in the KNP "KDC" of the Holosiivskyi district of Kyiv shows that the quality of service can be improved, then the following measures can be considered (Fig. 4.19):

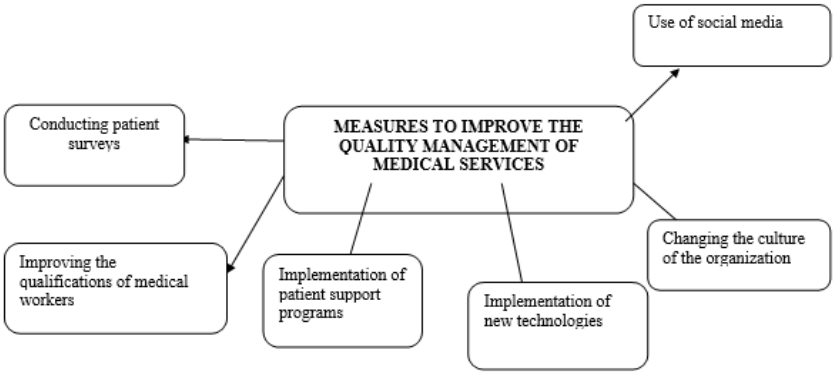


Figure 4.19 – Measures to improve the quality management of health care services in the Municipal Enterprise "CDC" of Holosiivskyi district of Kyiv

Ongoing monitoring of patient satisfaction aimed at objectively reflecting the quality of the medical system. Patient satisfaction with the treatment they receive is a clear indicator of the quality of the medical profession and is recommended by the World Health Organization. Assessment of patients' own opinions on all aspects of medical care plays an important role in the quality standards of medical care for the population. Traditional medical and statistical systems of indicators, as well as modern systems of statistical standards of clinical and nursing quality, cannot cover all aspects of health care services. It may even happen that all standards are met, but the patient is dissatisfied with the conditions of care,

in which case the quality of care will be unacceptable (Levytska, 2012). Continuous development of medical staff is maintaining or increasing the level of professionalism and developing individual medical practice to meet the needs of patients and optimize the functioning of the healthcare sector.

Expanding laboratory diagnostic services can improve consultation and treatment for patients and accessibility to the public. Simplification of certain stages of the service delivery process allows patients to choose the time of their visit to the doctor and make an appointment either in the helsi electronic system or through the reception. And a separate time has been set aside for urgent patients. Improving the diagnostic base allows for better patient diagnosis and the introduction of new diagnostic methods and timely treatment, meaning that patients receive medical care in a short time and, if necessary, are referred to specialized institutions for consultation. Improvement of the latest methods and their practical application in practice is the key to the effective functioning of healthcare facilities, achievement of general medical goals and provision of timely care to sick people. The study has shown that the innovation process requires the use of a process-oriented approach in the management of healthcare organizations, which will not only help to overcome urgent problems but also open up new prospects for development.

Thus, summarizing the above, by implementing the advanced achievements of medical science in their practice, doctors create conditions for improving the quality of life of patients. By modernizing equipment, introducing modern methods of diagnosis, treatment and prevention of diseases, and continuously improving capabilities. The MCC of Holosiivskyi district of Kyiv will be able to achieve the highest results by constantly improving its quality to facilitate the provision of qualified, high-quality and comfortable medical services.

4.6. Chronic inflammatory processes of the maternal genitourinary system, its role in cardiovascular diseases development in their children: Ukrainian and European experience of prevention as the key to the health of future generations

Cardiovascular diseases (CVDs) remain the leading cause of morbidity in the world. The burden of CVDs continues to increase over the past decade in almost all countries of the world. The prevalence of CVDs in the world has almost doubled from 271 million in 1990 to 523 million in 2019. The number of deaths from CVDs over the same period has

increased by twofold from 12.1 million to 18.6 million. The indicators of years of life with disability and lost years also doubled in total from 17.7 million in 1990 to 34.4 million in 2019 (Roth et al., 2020).

In Ukraine, CVDs take the lead among the causes of population mortality. According to the Global Burden of Disease (GBD) Study, 449,376 people died from CVDs in 2019, accounting for 64.33% of the total number of deaths, while in 1990 this figure was 350,605 (56.55%). The prevalence of CVDs increased from 9,701.67 cases per 100,000 population in 1990 to 12,679.43 in 2019, and the incidence rate rose from 1,420.96 to 1,918.33 over the same period (Global Burden of Disease Study, 2019). The increase in morbidity, prevalence, and mortality from CVDs in Ukraine is not as dramatic as compared to the global dynamics, but it is still continuous, and CVDs continue to be the leading cause of death in Ukraine.

The economic losses from CVDs in the United States of America alone, according to the Centers for Disease Control and Prevention, amount to 219 billion dollars annually (Centers for Disease Control and Prevention, 2021). American Heart Association data increase this figure to approximately 351.3 billion dollars due to the inclusion of indirect costs associated with premature cardiovascular mortality (Virani et al., 2020).

Data from Ukrainian and European statistics testify to the need for timely active measures aimed at preventing the development of CVDs. Modern strategies for the prevention of CVDs are primarily aimed at correcting the known risk factors: quitting smoking, regular physical exercise, normalizing body mass index, "ideal lipids", "ideal glucose", normalizing blood pressure, etc. (Reamy et al., 2018). What is not taken into account in this strategy? The very first periods of a human life, which significantly "program" health, duration and quality of life, remain beyond attention.

David Barker was the first to recognize the extraordinary importance of the intrauterine period in the pathogenesis of future CVDs, who put forward the world-famous theory of "intrauterine programming". The key postulate of this theory is the appearance of irreversible metabolic, physiological and structural changes in the organism as a result of the action of several negative factors during the intrauterine and perinatal periods of development (Barker & Fall, 1993). Today, the theory of "intrauterine programming" is perceived by medical and social professionals as the key to the health of future generations (Nazarenko & Nestertsova, 2020).

The cardiovascular system begins to form at 2-3 week of pregnancy in the mesodermal layer of the trophoblast. The main development of the heart occurs approximately from the 21st to the 42nd day of intrauterine life. By the end of the 4th week in the cardiac tube already distinguish 3 parts that are separated by shallow furrows and dilations of the lumen. From the end of the 5th week, the primary system of embryonic circulation begins to function. By 8-10 weeks, the formation of all parts of the heart is completed, which coincides with the development of the placenta and the emergence of placental circulation, which determines gas exchange and all nutritive support of the embryo developing. Full separation of the flows of right and left heart blood is only completed in the postnatal period (Frolova et al., 2020). Thus, the development of the child as a whole and the cardiovascular system in particular is a complex multifactorial process, which can affect a number of factors that can lead to both congenital defects in the development of the child and lay the foundation for the development of CVDs in the future ontogenesis. There are many of these factors. Among the main ones are medicines and various chemical compounds, ionizing radiation, bad habits, genital and extragenital pathology, etc. (Kaleelullah & Garugula, 2021).

In the structure of genital and extragenital pathology of women of reproductive age, significant parts are inflammatory diseases of the genitourinary system, which are characterized by predominantly chronic course. Simultaneous development of inflammatory diseases of the urinary and reproductive systems is explained by the facts that these systems' organs develop from one primary germ layer (mesoderm), they have a close anatomical-physiological connection, a common blood supply and lymphatic system, and are also target organs of sex hormones activity (Rudenko et al., 2018).

The analysis of statistics in Ukraine from 2000 to 2017 revealed that the prevalence and incidence of salpingitis and oophoritis had a tendency to decrease, and in 2017 it was 15.8 and 8.6 per 1000 women of working age, respectively, compared to 19.67 and 11.42 in 2000. During the period under consideration, an increase in the prevalence and incidence of inflammatory diseases of the uterus from 6.85 and 5.03 in 2000 to 12.5 and 8.6 in 2017 per 1000 women of the corresponding cohort (an increase of 82.5% and 70.9%, respectively) was revealed (Zhilka et al., 2018; Antypkin et al., 2020).

Approximately one third of women under the age of 24 and half of women under 35 suffer from chronic inflammatory diseases of the

genitourinary system. Up to 70% of women suffer from this pathology throughout their lives, of which 30% have recurrent course (Abou Heidar et al., 2019).

Chronic inflammatory diseases of the genitourinary system in mothers may be one of the risk factors for the development of fetal intrauterine growth restriction (IUGR) syndrome, which, according to current European recommendations, is characterized by a decrease in anthropometric indicators of the fetus below the 10th percentile (Kehl et al., 2017; Mericq et al., 2017). In Ukraine, the frequency of IUGR syndrome ranges from 12% to 36%, and the number of newborns with IUGR is 67.4 per 1000 live births and 179.5 per 1000 preterm births (Hromova & Berezhna, 2018). Our studies on autopsy material revealed changes in the morphological and functional state of the fetal and newborn hearts with IUGR, which increased in newborns compared to fetuses and were more significant in the asymmetric variant of IUGR compared to the symmetric one. Catamnestic studies show a partial development of arterial hypertension, coronary heart disease in people with prenatally IUGR (Yakovtsova et al., 2015).

Chronic inflammatory diseases of the genitourinary system in women can lead to the development of placentitis, which in turn can lead to premature rupture of the fetal membranes and preterm birth (Redelinghuys et al., 2020; Romero et al., 2016). The frequency of premature birth varies depending on clinical and sociodemographic factors. Thus, in the USA 1 out of 10 newborns are born prematurely (Tesfalul et al., 2021), in Europe the frequency ranges from 5% to 10% (Delnord et al., 2015), in Ukraine it is also at the level of approximately 10% and has a tendency to increase (Ibadova et al., 2022). Preterm birth in women with chronic inflammatory diseases of the genitourinary system can lead to developmental disorders in the fetus and newborn in subsequent ontogenesis of key organs and systems, including the cardiovascular system (Nobile et al., 2022).

Preterm birth is a risk factor for the development of arterial hypertension in people at different stages of ontogenesis. Thus, in adults born at 32 weeks of gestation, higher systolic, mean and diastolic blood pressures, as well as pulse pressure, were determined compared to adults born at 37-40 weeks of gestation (Tauzin et al. 2014). It's important to keep in mind that even minor fluctuations in blood pressure can have a significant impact on the risk of cardiovascular disease. Research has shown that a relatively small decrease of 4.7 mmHg in average blood

pressure can lead to a 32% lower risk of stroke and a 20% lower risk of ischemic heart disease (Cook et al., 1995).

Babies born prematurely are at a greater risk of developing heart failure later in life. The incidence of heart failure in individuals born extremely prematurely (less than 28 weeks' gestation) was 17.0 times higher compared to those born at term (37 weeks or more), after taking into account other factors. Similarly, those born very prematurely (28 to 31 weeks' gestation) had an incidence of heart failure 3.58 times higher compared to term births (Carr et al. 2017).

Another study used echocardiography to compare the cardiac function of healthy preterm infants born at less than 30 weeks of gestational age with that of term-born infants. The infants were all examined 28 days after birth, and a subset of preterm infants were examined at a term-equivalent age. The study found that preterm infants had left ventricular dysfunction during both systole and diastole, but there were no differences in fractional shortening, ejection fraction, or strain rates compared to term infants. However, at term-equivalent age, the preterm infants showed normal systolic left ventricular function but abnormal left ventricular diastolic function (Hirose et al., 2015).

Two clinical studies compared cardiac growth and function between young adults born preterm and term using magnetic resonance imaging (MRI). One study (Lewandowski et al., 2013a, January) found that the left ventricular mass of individuals born preterm was higher than that of term-born individuals (66.5±10.9 versus 55.4±11.4 g/m(2); P<0.001), and the degree of prematurity was positively associated with the mass (r = -0.22, P=0.03). Preterm-born individuals had a short left ventricle with a small internal diameter and a displaced apex. Although the ejection fraction was preserved (P>0.99), both systolic (peak strain, strain rate, and velocity, P<0.001) and diastolic (peak strain rate and velocity, P<0.001) longitudinal function and rotational movement (apical and basal peak systolic rotation rate, P=0.05 and P=0.006; net twist angle, P=0.02) were significantly decreased. Offspring of mothers who were diagnosed with preeclampsia during pregnancy had further reductions in longitudinal peak systolic strain (P=0.02, n=29). Second study (Lewandowski et al., 2013b, August) found that preterm birth was associated with a small right ventricle (end diastolic volume, 79.8±13.2 versus 88.5±11.8 mL/m2; P<0.001), but a greater right ventricular mass (24.5±3.5 versus 20.4±3.4 g/m2; P<0.001) compared to term-born controls. The severity of differences was proportional to gestational age. Young adults born preterm had significantly lower right

ventricular ejection fraction, with 21% having values below the lower limit observed in term-born adults and 6% exhibiting mild systolic dysfunction. The changes are greater in the right ventricle than previously observed in the left ventricle, with potentially clinically significant impairment in right ventricular systolic function.

Asymptomatic course of the inflammatory process of the reproductive system caused by chlamydia in women may be a teratogenic factor causing the development of congenital heart defects in their children (Appiah et al., 2023). Maternal hyperthermia caused by the presence of chronic inflammatory diseases of the genitourinary system during pregnancy leads to the development of cardiovascular malformations in the offspring (Tikkanen & Heinonen, 1991).

Maternal genitourinary system infection during pregnancy is known to alter the development and function of offspring's immune system, leading to inappropriate immune responses to common childhood infections and immunizations (Gibbs & Fairfax, 2022).

Fetal stressor such as maternal chronic inflammatory diseases of the genitourinary system may directly or indirectly impact cardiovascular programming, by inducing a sustained inflammation and activation of hypothalamic-pituitary-adrenal axis, alterations to cellular and molecular levels of cardiovascular system, with the result of programming the endothelium and the susceptibility to onset of diverse pathologies, such as atherosclerosis (Balistreri, 2020).

Through experimental studies on nonhuman primates, it has been determined that multiple sets of genes, biological pathways, and transcription factors associated with morphogenesis and vasculogenesis are disrupted in the context of intrauterine infection and inflammation. This occurs as a result of inflammatory cytokines produced by the placenta in response to bacteria and/or components of the bacterial wall. These cytokines diffuse into the amniotic fluid and fetal blood, leading to a placental and fetal inflammatory response (Mitchell et al., 2018).

In another experimental study on the effects of intrauterine inflammation on sheep hearts, by introducing lipopolysaccharide (a component of the bacterial wall) intra-amniotic, it was found that intrauterine inflammation alters heart growth, suppresses contractile function, and increases stress response. The hearts of fetuses exposed to lipopolysaccharide (LPS) showed a 40% reduction in contractility in both the left and right ventricles and a 25% decrease in the number of cardiomyocytes. Immature mono-nucleated cardiomyocytes had smaller

volumes (about 18%), while mature bi-nucleated cardiomyocytes had volumes about 77% larger. Although the basal coronary flow was increased by 21±7% in LPS-exposed hearts, there was a significant increase in end-diastolic pressure (2.4±0.3-fold) and infarct area (3.2±0.6-fold) following experimental ischemia/reperfusion (IR) compared to the control group (Tare et al., 2014).

The analysis of the research results of Ukrainian and European scientists has shown that chronic inflammatory processes of the genitourinary system of the mother are a significant damaging factor that can change the morphological and functional state of the fetal and newborn cardiovascular system and cause the development of CVDs at various stages of ontogenesis.

Considering the prevalence of chronic inflammatory processes of the genitourinary system in women of reproductive age, the significance of the mentioned pathology of the mother in the development of CVDs in their children, the current issue is a change in the classical approaches to the prevention of CVDs. In the concept of CVDs prevention throughout life, emphasis should be made on preconceptional and prenatal stages, i.e. from the moment parents make a decision to have children. It is also necessary to start with the prevention of infectious and inflammatory diseases in future mothers. This will fully correspond to the principles of the World Health Organization “Action Plan for Sexual and Reproductive Health: towards achieving the 2030 Agenda for Sustainable Development in Europe” – leaving no one behind, such as the realization of the potential of sexual and reproductive health, minimizing maternal and perinatal mortality and morbidity that can be avoided, integration of sexual and reproductive health into national health strategies and programs (World Health Organization, 2016).

Educational initiatives are needed to increase women's awareness about their own reproductive health and potential risk factors for mother and child. On the part of the health system, measures should be taken to diagnose and treat infectious and inflammatory diseases of the genitourinary system in a timely manner.

Thus, chronic inflammatory processes of the mother's genitourinary system are one of the factors that can cause the development of CVDs in children at different stages of ontogenesis. The classic concept of CVDs prevention should be supplemented taking into account the "programming" effect of harmful factors that act on the preconception and prenatal stages and reliably increase the risk of CDVs development. Among the

reproductive age, it is extremely necessary to carry out measures aimed at prevention, timely diagnostics and treatment of infectious and inflammatory diseases of the genitourinary system. Ensuring reproductive health at the proper level is one of the priorities and values of European civilization, so the promotion of a healthy approach to life is one of the ways of European integration of Ukraine.

4.7. Urogenital inflammatory diseases in women of reproductive age as a cause of an unhealthy start of children's life: Ukranian and European research

Maternal and child health is the most important medical and social problem in the world. Modern scientific research of the world's leading specialists has shown (Sekikubo et al., 2020; Sureshbabu et al., 2021) that fetus and newborn adaptive reserves depend to a greater extent on case of maternal diseases during pregnancy, especially infectious diseases, which can definitely lead to pathology of various organs and systems in fetus, defects in immune response, metabolic problems and affect life expectancy. Recently interest to the problems of perinatal nephropathy has increased, as many kidney diseases in elder children have their origins in the antenatal and intranatal periods. No pathological condition in pregnant woman affecting the fetus leaves the kidneys intact (Gomi et al., 2015; Kazemier et al., 2016).

Epidemiological studies demonstrate that in the first year of life, nephropathology is more often diagnosed in boys, and from the second year of life and throughout childhood, girls suffer from this pathology more often (Budnik, 2019).

The non-specificity of clinical symptoms of perinatal nephropathies, the hidden onset and torpid course of pathological process, the low informativeness, technical complexity, invasiveness of many existing methods in studying newborn’s kidney functions complicate in-time diagnosis of perinatal renal pathology and contribute to chronic pathology, development of chronic kidney disease and formation of chronic renal deficiencies just in childhood (Govindarajan et al., 2022; Henderson et al., 2023).

The increase in the incidence of newborn’s kidney pathology is associated with an increase in the frequency of chronic urogenital

inflammatory diseases in the mothers, which can manifest as cystitis, pyelonephritis, salpingo-oophoritis, endometritis, asymptomatic bacteriuria, etc. (Albright et al., 2015; Minassian et al., 2013).

The occurrence of urogenital infection in women during pregnancy or before remains a problem for doctors for many years. It is known that about 40% of women during pregnancy have episodes of urogenital infection, the development of which can be attributed to following factors: female anatomical and physiological features, represented by a short and large urethra, closeness of urethra to the rectum; violation in urodynamics caused by hypotonia and dyskinesia of urinary tract due to an increase in the concentration of estradiol and progesterone, an increase in concentration of glucocorticoids; mechanical compression of ureters in the second half of pregnancy by an enlarged uterus and dilated ovarian veins; weakening of urethral sphincter at the end of pregnancy; a change in the properties of urine, which is manifested by an alkaline reaction due to bicarbonateuria as reaction on increased rate of glomerular filtration, etc. Also urodynamic disorders caused by obstructive causes, neurogenic disorders, vesicoureteral reflux, foreign bodies (stents, stones) and a number of concomitant diseases (renal failure, immunosuppressive state, anemia, etc.) are the factors that complicate the course of urogenital infection. Therefore, two main factors contribute to the occurrence and development of urogenital infection, especially pyelonephritis, in pregnant women and they are an infectious focus in the body and a violation in urodynamics of urinary tract (Bruxvoort et al., 2020; Sureshbabu et al., 2021; Xu et al., 2017).

In women who suffered from cystitis, urethritis or acute pyelonephritis in childhood, gestational pyelonephritis is often registered, which, according to statistics, escalates in nea in third of such pregnant women. Researchers have established that the kidneys function with great stress during pregnancy, because remove metabolic products of the woman herself and the fetus (Archabald et al., 2009; Hooton et al., 2013; Kulkarni et al., 2013).

There is a variety in causative agents of urogenital infection, in particular pyelonephritis (Al-Orphaly et al., 2021; Gajdacs et al., 2019; Li et al., 2019). The etiology of gestational pyelonephritis is directly related to the obligate and facultative microflora of gastrointestinal and urogenital tracts (Gharaghani et al., 2021; Kroken et al., 2018; Subashchandrabose et al., 2015). The most frequent causative agents of pyelonephritis are gram-negative bacteria (Escherichia coli, Proteus mirabilis, Proteus vulgaris,

Klebsiella pneumoniae, Enterobacter spp., Serratia spp., Pseudomonas aeruginosa) (Newman et al., 2017; Nicolle et al., 2019; Scavone et al., 2015; Subashchandrabose et al., 2015; Yuan et al., 2021) and gram-positive bacteria (Streptococcus pyogenes. Enterococcus faecalis, Staphylococcus aureus) (Deutch, 2017; Nallapareddy et al., 2011). Their importance increases significantly in case of nosocomial infection. Candida albicans and Blastomyces can act extremely rarely as pathogens (Gharaghani et al., 2021). Microbial associations are detected in more than 20% of pregnant women with pyelonephritis (Bruxvoort et al., 2020; Montagut et al., 2021).

There are three main mechanisms of pyelonephritis. From the site of infection via hematogenous (descending) way microorganisms in the form of infected emboli enter the kidney glomerular layer, glomerular capillaries and small terminal vessels. Via lymphogenic route the infection penetrates from the genitals and intestine. Transurethral (ascending) way with vesicoureteral reflux, which is observed directly during pregnancy (Al-Orphaly et al., 2021; Gajdacs et al., 2019; Li et al., 2019).

It is found that the course of gestational pyelonephritis caused by gram-negative microorganisms (Chathley et al., 2016; Li et al., 2019; Scavone et al., 2015), especially in the form of a mixed infection, is the most severe with bacterial shock and septicemia (Albright et al., 2015). Bacterial shock often develops with the start of antibacterial therapy according impaired urine outflow (Ailes et al., 2016; Committee Opinion No. 717, 2017; Sekikubo et al., 2017). Administration of antimicrobial drugs causes massive death of microorganisms (Ekwealor et al., 2016; Gu et al., 2022), and violation of the outflow of urine from the upper parts of urinary tract contributes to accumulation of endotoxins and their entry into the blood due to the occurrence of pelvic-renal reflux.

A serious problem of pyelonephritis in pregnant women is that the infectious process in kidneys is accompanied by great changes in the body's immune system, which affect the course and progression of the disease. There is a significant infiltration of kidney parenchyma by polymorphonuclear leukocytes, T- and B-lymphocytes, plasma cells together with inhibition of the functional activity of neutrophils, natural killer cells and disruption in immunoregulatory mechanisms of immune response (Kline et al., 2012; Lacerda et al., 2020).

Among the non-specific protective factors, the most important role in the immune protection of the body against infectious agents belongs to phagocytosis. Insufficient phagocytic activity of neutrophils is the most important factor in pathogenesis of urogenital inflammatory diseases

(Kroken et al., 2019; Mortimer et al., 2017). When phagocytosis is disturbed, there is persistence of bacteria that cause inflammatory changes in kidneys. Defects of phagocytic protection in kidneys infectious and inflammatory diseases are considered as one of the conditions for development of chronic inflammation. Information about the state of humoral immunity in chronic pyelonephritis in the stage of exacerbation during pregnancy is contradictory, but most international experts note that the active stage of pyelonephritis is accompanied by a decrease in B-lymphocytes content. A decrease in the level of immunoglobulins (IgG and IgA) in the peripheral blood is considered an immunodeficiency that requires correction. With chronic pyelonephritis in pregnant women, the content of other humoral indicators of protection also changes: lysozyme [1], complement, circulating immune complexes. In women with frequent relapses of chronic pyelonephritis during pregnancy, in addition to low indicators of T cells in the general pool and their functional activity, a deficiency of certain subpopulations of lymphocytes is noted. At the same time, a decrease in immunoregulatory index is observed due to an increase in the number of cytotoxic T cells. The above mentioned allows us to conclude that there is a deficiency of quantitative and functional indicators of the T-chain of immunity in excalation of chronic pyelonephritis during pregnancy. As the cause of cellular immunity suppression some scientists name the previous immunodeficiency, which increases during disease in pregnancy, especially in the third trimester; others consider that the defects in phagocytosis, when the slow elimination of bacteria leads to antigenic hyperstimulation, suppress cellular link of immunity. Prolonged inflammatory process leads to sclerosing of kidney tissue, impaired kidney concentration ability. It is possible to develop hypertension and kidney failure (Bookstaver et al., 2015; Nielubowicz et al., 2010), which can cause the development of various complications in pregnancy and childbirth.

Women with chronic inflammatory diseases of the genitourinary system often develop various complications during pregnancy and childbirth (Kumar et al., 2022). These complications may be placental insufficiency, fetal distress, intrauterine fetal development delay, intrauterine infection of fetus, premature birth, premature rupture of fetal membranes, etc. (Tsyupa, 2018).

Chronic infectious and inflammatory diseases of genitourinary system in mothers are factors that damage fetus and newborn kidneys. The conducted studies indicate the frequent development of an infectious-inflammatory process in kidneys in such newborns, which is explained by

the morpho-functional immaturity of this organ and immaturity of local immunity (Khalesi et al., 2014; Kazemier et al., 2015; Sorokina et al., 2018).

Maternal chronic inflammatory diseases of the genitourinary system cause dysfunction of immune system, development of systemic inflammation and kidney damage in newborn (Pedersen et al., 2019). Maternal endotoxemia in Escherichia coli experimentally induced infection of urinary system leads to proteinuria, excessive collagen deposition and development of sclerotic changes in the kidneys (Farias et al., 2020). Maternal infectious-inflammatory process in genitourinary system can act as one of the factors that damages embryogenesis of kidneys at organ, tissue and subcellular levels. Studies have shown an increase in case number of kidneys and urinary tract congenital abnormalities among children exposed to such mathernal pathology in utero (Arima et al., 2018).

The presence of pyelonephritis in pregnant woman is accompanied by inflammatory changes in placenta, development of intrauterine infection and manifestations of endogenous intoxication with hypoxic and toxic damage in fetus kidneys (Schneeberger et al., 2013; Smaill et al., 2015). In addition, antimicrobials prescribed treatment of pregnant women are dangerous for the child’s future (Sihra et al., 2018). It has been established that the frequency of nephropathy in children born from mothers who suffered with pyelonephritis during pregnancy is in 20 times higher than in the general population (Mortimer et al., 2017; Pathak et al., 2013).

The results of Ukranian and European research indicate that chronic inflammatory diseases of mother's genitourinary system are a damaging factor that leads to development of kidney pathology in children at various stages of ontogenesis. In order to prevent the development of nephropathology in children, it is absolutely necessary to carry out, firstly, measures directed to prevent the development of urogenital inflammatory diseases in women of reproductive age, and secondly, in-time detection and treatment of the specified pathology in this category of persons.

The modern strategy in prevention and treatment of urogenital infection of pregnant women involves a multidisciplinary approach with the involvement of specialists from various fields. Increasing the effectiveness of therapy in women with urogenital infection will contribute to the comprehensive management of woman at all stages of pregnancy and will include the optimization of antibacterial therapy (Guo et al., 2018; Widmer et al., 2015), the restoration of urine passage in development of

urinary tract obstruction and prevention of fetoplacental insufficiency formation.

The rational construction of antibacterial therapy means taking into account the indications for its appointment, the sensitivity of pathogen isolated from the urine, the safety profile of drugs, the time of initiation and duration of treatment, namely the application of all the principles of prescribing antimicrobial drugs (Juralowicz et al., 2020; Shrestha et al., 2019).

Adherence to algorithm of women examination, dynamic observation from early gestation, in-time inpatient examination and complex treatment depending on the severity of the disease, prevention of relapses, as well as prevention and treatment of pregnancy complications will contribute to an optimistic prognosis regarding the healthy start of child's life (Moore et al., 2018; Sathiananthamoorthy et al., 2019).

The use of preventive technologies in modern medical practice helps to avoid fetus infection, but the influence of pathogen's virulence factors on development of pathological process in tissues of various organs is an urgent problem.

The course and outcome of infectious process are determined by a complex of interactions between causative agents of urogenital infection and macroorganism, and the mechanism of chronicity is determined by pathogen's heterogeneous properties, routes of infection and is related to host immune system, on correct functioning of which directly depends an outcome of disease both in mother and in child.

A practical solution to this problem can be implemented only with a comprehensive and in-depth study of features in interactions of components of "mother-placenta-fetus" system and the creation of an algorithm for necessary diagnostic procedures and a system of preventive measures to avoid development of intrauterine kidney pathology, and for this it is necessary to study the risks of pathological process in fetus using an interdisciplinary approach: to study the state of microbiome in pregnant women, factors of pathogenicity and virulence in urogenital pathogens and the impact on development of pathological process in fetus, determination of kidney-specific enzymes, the state of cellular and humoral immunity, cytokine balance and many other indexes.

Thus, the presence of chronic inflammatory diseases of the genitourinary system in pregnant woman is an unfavorable background in course of pregnancy, on which the possibilities of adaptative mechanisms are reduced or limited, various complications of pregnancy arise and fetus

kidneys morpho-functional state changes. And this in future will lead to development of various kidney pathologies. In order to prevent the development of kidney pathology in children, to carry out in-time diagnostic and treatment measures, an urgent question today is understanding of key pathophysiological mechanisms of influence of various negative factors during the intrauterine period when nephrogenesis occurs.

4.8. The impact of COVID-19 on the national economy: trends and prospects for achieving the state of resilience of the medical and social welfare system of the population[3]

The outbreak of the new virus occurred in December 2019 in China, from where it began to spread to all continents. On March 11, 2020, WHO stated that COVID-19 as a global pandemic. It changed the socioeconomic development of the world's countries, the medical and social welfare of the population, economic, institutional-political, financial-budgetary and education. Due to quarantine restrictions and lockdowns, the economic growth of most countries has slowed down significantly.

Many pharmaceutical campaigns changed their vector of development in the direction of inventing an effective vaccine that would avoid catastrophic economic and social consequences. For example, China's economic growth slowed to 4.5% in the first quarter of 2020, down from 6% in the fourth quarter of 2019. Stock market indices fell in America, Europe and the countries of the Asia-Pacific region. Oil prices fell significantly, which was due to a reduction in demand for it, in particular from China, as one of the main importers. A slowdown in the development of the metal market was observed: in mid-January 2020, it "slugged" by 7.1%. The copper index fell by 10.4%, nickel by 8.7%, tin by 8.2%, zinc by 7.3%, lead by 4.6%, and aluminum by 3.5%. A shortage of products and components from China, the basis for the production of complete products of foreign companies, began to be felt. The revenues of

[3] This research was funded by the Ministry of Education and Science of Ukraine, grant numbers 0122U000781, 0122U000778

the world's airlines and sea transport decreased significantly. Thus, in the first quarter of 2020, global revenues of the aviation industry fell by more than 4 billion dollars due to a reduction in passenger traffic. Sea transport faced the need to increase freight rates. The state of tourism deteriorated. At the same time, it is worth noting the growth of more than 150 billion dollars in profit in the global industry of game, educational and other online applications. Investors were looking for less risky assets such as government securities and gold has increased. Among the positive changes, was a decrease in nitrogen dioxide emissions by more than 36% compared to the previous analyzed periods until 2020 (Dolbneva, 2020).

As for Ukraine, on March 3, 2020, the first sick person was found there. The beginning of the pandemic coincided with a political crisis due to political confrontations surrounding the change of the government of Oleksii Honcharuk and the appointment of a new one – Denys Shmyhal. The fight against the pandemic in Ukraine took place in conditions of rapid adaptation to the threat of the coronavirus. To prevent the spread of COVID-19, the Verkhovna Rada of Ukraine, during an extraordinary meeting on March 17, 2020, adopted Law of Ukraine No. 530-IX "On Amendments to Certain Legislative Acts of Ukraine, Aimed at Preventing the Occurrence and Spread of the Coronavirus Disease (COVID-19)." The new law provides for many changes to many legislative acts: to the Code of Ukraine on Administrative Offenses, the Criminal Code of Ukraine, the Tax Code of Ukraine, the Customs Code of Ukraine, the Labor Code of Ukraine, the laws of Ukraine "On Chambers of Commerce and Industry in Ukraine", "On public procurement", "On the State Budget of Ukraine for 2020", "On holidays", "On prevention of corruption".

The national economy was critically affected during the pandemic because business was practically stopped. The population of Ukraine experienced a significant decrease in living standards and incomes. The most important problem of the country’s citizens remains poverty, which became even more noticeable during the pandemic because during the crisis the amount of work and the payment for it decreased. Many firms have laid off workers and cut wages. The coronavirus pandemic affected global political processes. The confrontation between the USA and China intensified, and the tension between the USA and the EU, the European Union and Russian Federation intensified.

Ukraine forcibly took a step towards the development of online education in 2020. Most of the educational programs of secondary schools and institutions of higher education have gone online, except for

kindergartens. Ukraine has adapted to distance learning. An online television school was also launched.

List of steps regarding social security of the population of Ukraine in the conditions of the coronavirus pandemic.

– Decree of the President of Ukraine dated January 29, 2021 "On some measures to ensure citizens' right to quality and safe social services";

– Resolution of the Cabinet of Ministers of Ukraine "Issue of providing compensation to certain categories of electricity consumers";

– Resolution of the Cabinet of Ministers of Ukraine "On Amendments to the Procedure for Using Financial Assistance by the Social Insurance Fund of Ukraine for Insurance Payments in the Event of Illness or Death of Medical Workers Due to Infection with the Acute Respiratory Disease COVID-19 Caused by the SARS-CoV-2 Coronavirus";

– Resolution of the Cabinet of Ministers of Ukraine "On the Register of Providers and Recipients of Social Services", etc.

Table 4.9 shows the situation in the medical and social security of the population of Ukraine as of mid-April 2020. According to the results of the authors' research, the main challenges faced by the national economy in 2020-2021 were:

– unemployment growth;
– partial or part-time employment;
– sending employees on unpaid vacations;
– loss of income, shadow employment;
– labor migration;
– increasing negative trends regarding the differentiation and inequality of the population;
– a drop in the social status of the population;
– a drop in consumer demand;
– an increase in arrears for payments on loans;
– communal services;
– social isolation, etc.

The main directions of mobilizing resources to counter pandemic challenges in the national economy: stimulation of the economy and employment (crediting and financial support of certain sectors of the economy); support for enterprises, preservation of jobs and incomes (provision of benefits for enterprises, subsidies, as well as the introduction of measures to preserve employment, in particular, the spread of forms of non-standard employment); strengthening measures to protect workers at

the workplace (implementation of anti-epidemiological measures, changes in the organization of work (proliferation of forms of remote employment)) (Otsinka sotsialno-ekonomicnoho, 2023).

Table 4.9 – Indicators of the system of medical and social security of Ukraine (built by the authors according to the data (Coronavirus in Ukraine, 2023))

Region	The number of people infected with COVID-19	Number of deaths from COVID-19	Population, thousands of people	Number of the population aged 0-15, thousands people	Number of the population aged 15-64, thousands of people	Number of the population aged 64+, thousands people	Number of population calculated per hospital bed
Vinnytsia	2,698	50	1,540.3	25,7291	1,037,425	273,339	145.0
Volyn	3,735	84	1,030.4	21,6376	693,743	134,162	142.7
Dnipropetrovsk	1,394	27	3,166.4	527,300	2,161,187	543,493	114.2
Donetsk	865	12	4,121.9	530,439	2,790,401	864,612	n.d.
Zhytomyr	1,807	37	1,204.4	215,456	816,985	200,651	145.8
Zakarpattia	5,078	183	1,252.8	264,644	855,614	148,023	147.5
Zaporizhzhia	779	21	1,681.2	265,417	1,153,683	300,821	119.6
Ivano-Frankivsk	4,446	136	1,365.7	249,207	941,447	193,791	130.4
Kyiv	3,672	62	1,782.1	316,904	1,191,765	269,094	138.0
Kirovohrad	702	35	929.1	151,139	626,170	170,456	117.7
Luhansk	122	1	2,131.6	248,609	1,459,715	455,569	n.d.
Lviv	9,379	255	2,507.5	437,329	1,722,367	368,536	120.5
Mykolaiv	578	14	1,116.5	187,156	768,602	185,419	141.7
Odesa	3,150	44	2,374.4	426,166	1,595,555	369,700	128.4
Poltava	431	15	1,382.4	210,849	946,452	247,157	126.3
Rivne	5,942	93	1,151.6	251,849	774,595	143,317	135.4
Sumy	484	8	1,063.9	152,373	740,350	195,304	122.0
Ternopil	2,922	39	1,036.3	176,285	714,801	161,683	120.2
Kharkiv	3,626	127	2,651.3	389,629	1,842,685	448,909	119.4
Kherson	224	3	1,024.5	177,847	702,809	165,656	130.9
Khmelnytskyi	1,109	24	1,251.5	212,553	845,820	215,196	127.0
Cherkasy	919	37	1,187.9	179,216	809,337	224,563	123.9
Chernihiv	789	18	987.1	165,693	616,398	128197	136.6
Chernivtsi	5,812	216	900.2	144,582	665,917	195,239	107.2
Kyiv	8,131	132	2,965.5	508,450	1,994,211	431,664	98.3

Typical measures to combat the spread of COVID-19 in society include: developing and distributing among the population reminders about the dangers and ways to prevent the disease and its complications; introducing remote forms of customer service in the public and corporate sectors (Kostrytsia & Burlai, 2021).

Generalized world experience in combating the pandemic to the level of negative economic consequences made it possible to form the main strategic vectors of state policy to minimize risks and dangers in the field of the national economy in the context of the COVID-19 pandemic (Novikova, & Pankova; Vasilyeva et al., 2020):

– overcoming the high level of poverty in the country and its growth trends caused by the economic crisis and the negative impact of the coronavirus pandemic;

– preventing the growth of crime, processes of demoralization of the population, and cases of demented behavior;

– overcoming risks to public health, increasing the efficiency of the system of medical and social welfare of the population, educational work on the importance of implementing preventive measures and complying with quarantine requirements in pandemic conditions;

– raising the general level of society's safety culture;

– creation of a unified information space for security agencies and services and management of life activities of cities and regions with the implementation of projects "Safe territory in the conditions of countering the COVID-19 pandemic";

– establishment of targeted responsibility of state and regional authorities for failing to respond to risks and dangers caused by the coronavirus pandemic;

– orientation of state policy to create a system of measures to motivate business representatives to invest in projects in the scientific and medical sphere to overcome the COVID-19 pandemic and its negative consequences;

– provision of rehabilitation conditions for persons with severe consequences for life and health due to the incidence of coronavirus;

– creation of a system of social and communication interaction between medical institutions (doctors) and citizens regarding the needs for the provision and involvement of medical services, overcoming the obstacles of the incompatibility of the health care system with the load of patients in the conditions of a pandemic;

– introduction of insurance medicine aimed at taking into account the specifics of the incidence of COVID-19;

– development of evaluation methodology and forecasts of the impact of digitalization of the economy on the sphere of work, as well as forecasts of prospective labor force balances for the basic sectors of the economy, taking into account digital transformations in the conditions of the pandemic;

– forming in the public consciousness the norms and values of the culture of safe life activities, behavioral models of self-preservation in the conditions of epidemiological threats;

– formation of healthy lifestyle skills, self-preservation, endurance, ability to act in conditions of significant moral, physical, and mental stress, quarantine restrictions, and increasing the body's resistance to the influence of stress factors.

4.9. Prospects for the implementation of investment projects in the field of health care in Ukraine

Foreign investments play an important role in the development of the national economy of any country in the world, Ukraine in this case is no exception. With the development of transnational corporations, society pays more and more attention to the issue of their placement and development in the modern economy.

The expediency of sectoral and territorial placement increasingly affects the increase in economic activity of the population, the creation of new jobs, and sometimes entire production branches of the national economy, which ultimately determines the structure of the state's economy and shapes its policy.

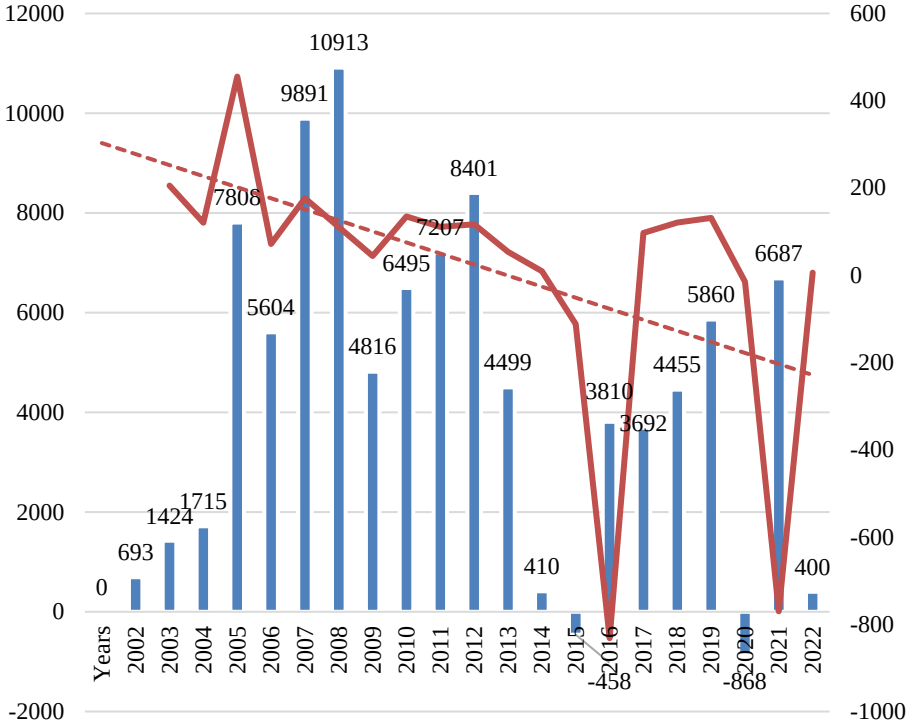
Attracting funds from foreign investors contributes to the activation of the investment process, the introduction of new technologies, the use of advanced foreign experience, the development of small and medium-sized businesses, and the growth of investment potential.

In Ukraine, the investment placement process takes place with the participation of the state, which has investment legislation that is adapted to EU norms and 50 international agreements, the subject of which is the protection and promotion of investments.

Foreign direct investments in the economy of Ukraine over the past 20 years have been quite uneven (Fig. 4.20) (National Bank of Ukraine,

2023). Calculations given in Figure indicate that the inflow of foreign direct investment to Ukraine for the period 2002-2022 fluctuates significantly and depends significantly on the state and changes in the political and economic situation in the country and the world.

Thus, in 2005, hoping for positive changes after the events of 2004, foreign investors invested USD 7,808 million in the economy of Ukraine, which is 4.6 times more than in 2004. The largest volume of foreign investment inflows to Ukraine occurred in 2008 (10,913 million US dollars), 6.4 times (9,198 million US dollars) more than in 2004.



Data for 2014-2022 are given without taking into account the temporarily occupied territory of the Republic of Crimea and the city of Sevastopol and without a part of the temporarily occupied territories in the Donetsk and Luhansk regions since 2014 [20]

Figure 4.20 – Inflow of foreign direct investment to Ukraine, million USD

A significant reduction in foreign direct investment inflows in 2009 is largely explained by the global economic crisis (the volume of income decreased by 55.9% compared to 2008, which amounted to 6,097 million US dollars).

In general, during 2010-2022, the volume of foreign direct investments amounted to 40.4 billion US dollars, of which the final controlling investor is a resident, estimated at 9.5 billion US dollars, which is 23.5% of the inflows of direct foreign investments in Ukraine for the above-mentioned period, i.e., we observe that 76.5% of Ukraine acts as a transit country, i.e., we have to observe the process when funds are sent by a resident outside of Ukraine and then returned to Ukraine in the form of direct foreign investments. This process is called "round-tripping" in world practice.

The largest volumes of round-tripping investments in Ukraine were observed in 2010-2013 and accounted for 32.7% of the total volume of foreign direct investments, 89% of which were directed to the real sector of the economy.

Political changes in the country and the beginning of military aggression in the East of Ukraine caused the redirection of investment flows, therefore, from 2014 to 2015, there was an outflow of funds from Ukraine for operations related to investment.

The situation changes in 2016-2020, when there is a gradual increase in the net inflow of funds, especially for round-tripping operations (Fig. 4.21), but already in smaller volumes than in 2010-2013.

The dynamics of investments from Ukraine are intense, but there have been no significant changes (except for 2014 due to military aggression in Ukraine).

During 2010-2020, the net inflows of direct investor loans were mostly formed due to round tripping (taking into account loans financed by the issuance of Eurobonds) (Fig. 4.22).

The structure of direct foreign investments in the economy of Ukraine by types of economic activity is graphically depicted in Fig. 4.23 (SFI, 2022).

It is important to study the dynamics and structure of the total amount of capital investments in the country, which are investments in the acquisition or production by one's forces for one's own of tangible and intangible assets.

The analysis of the dynamics of the inflow of foreign direct investments showed that any aggravation of the political situation causes

not only a significant reduction in the inflow of investments but also an outflow of funds from the country.

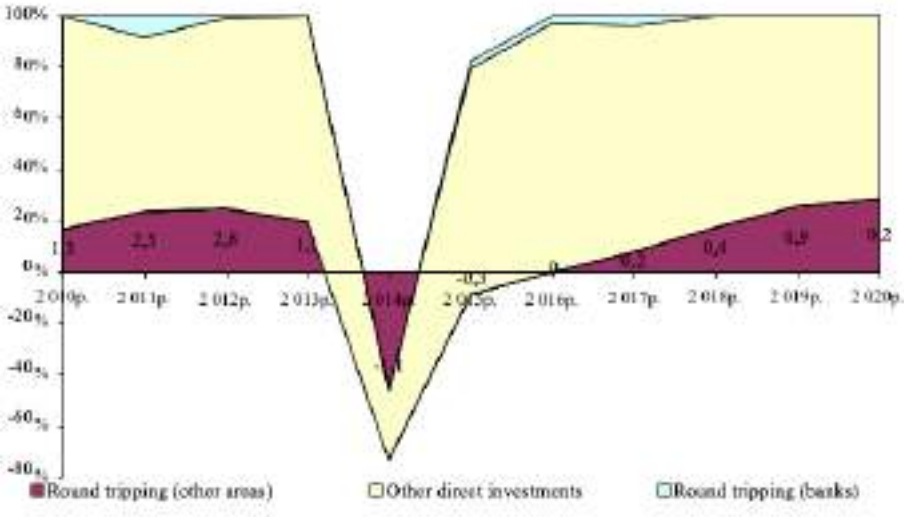


Figure 4.21 – Dynamics of foreign direct investment inflows to Ukraine, billion US dollars (excluding reinvestment of income)

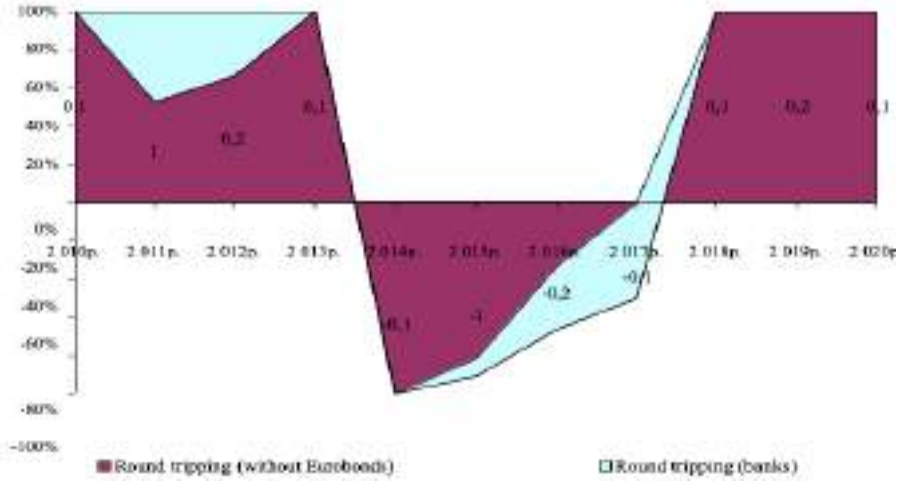


Figure 4.22 – Dynamics of round tripping operations to Ukraine, billion US dollars (excluding Eurobonds)

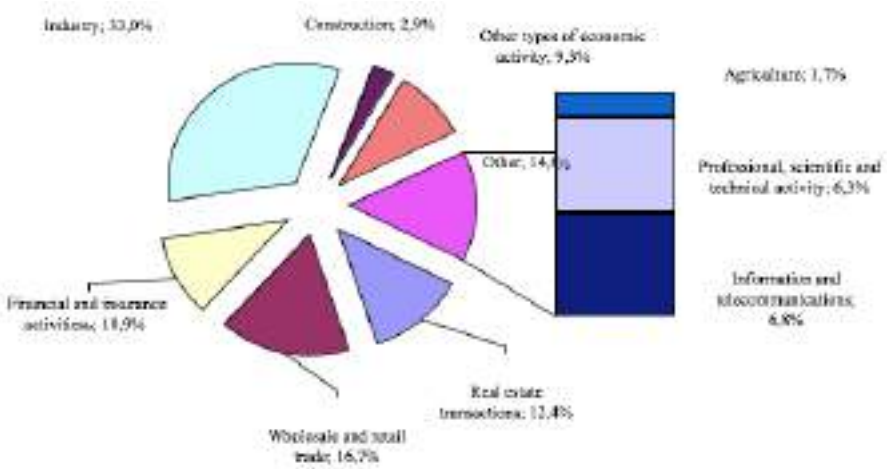


Figure 4.23 – The structure of foreign direct investments in the economy of Ukraine by types of economic activity as 2021, %

The study of the structure of capital investments by funding sources showed positive structural shifts in their composition, which occurred due to an increase in the volume and share of capital investments from the state budget and local budgets (Chepelenko, 2020).

Also, in the structure of capital investments, the share of own funds of enterprises and organizations increased, which indicates that enterprises and organizations do not rely much on obtaining loans and other sources of financing, but invest their funds in the purchase of tangible and intangible assets.

The sphere of health care has always been of great importance in society, however, the events of the last two years require a different view and attitude to this sphere, which needs modernization and reconstruction, improvement of the quality of medical services, which is associated with an increase in its capitalization.

Due to the fact that funds for such processes have historically been insufficient, the need to attract investment capital, both domestic and foreign, has always been an urgent issue.

The investment attractiveness of Ukraine's health care sector requires a different understanding, because the conditions for effective investment have been created, but risks, both global and local, hinder it.

The results of the analysis of capital investments in the health care field for the period 2010-2021 indicate the positive dynamics of both

capital and foreign investments, but their specific weight is negligible (Fig. 4.24).

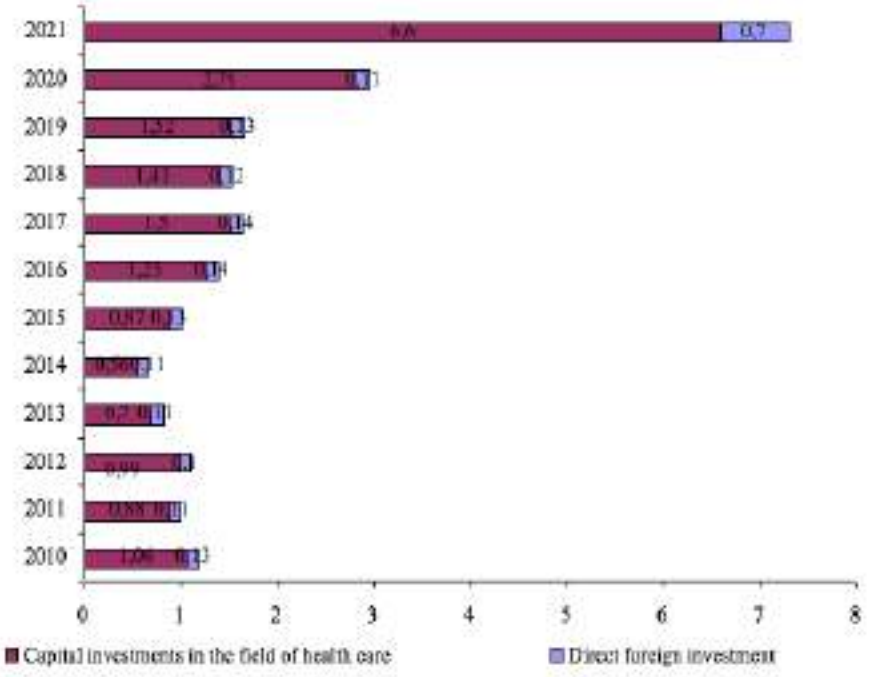


Figure 4.24 – The specific weight of capital investments and direct foreign investments in the healthcare sector of Ukraine in gross investments for 2010-2021, %

A steady trend of their increase is observed from 2019 to 2021. Thus, the specific weight of capital investments increased by 4.34 times, and that of direct foreign investments by 5.39 times. It should also be noted that the specific weight of capital investments in the field of health care in gross investments during the studied period has changed significantly, and if 2020 it fluctuated between 1.06% and 1.52%, then starting from 2020 its share amounted to 2.7%, and in 2021 it already amounted to 6.6%.

Such a situation, on the one hand, may result from decentralization and the implementation of health care reform, on the other, global challenges caused by the COVID-19 pandemic. Analyzing the given data, it is possible to conclude that the healthcare sector is not an attractive

investment for all categories of investors. The conditions for attracting foreign direct investment to Ukraine are political, economic and financial stability, investment guarantees, improvement of legislative acts regulating investment activity and general improvement of the investment climate. The investment climate, which plays a significant role in investment processes, should strive for stability, which Ukraine is trying to achieve even in the face of military aggression. Each state and business project, as a rule, has a temporary nature, as it is created for a certain period to solve a specific task.

Based on the study of the issue of public-private partnership as a form of partnership, it is possible to state that the main factors that determine the forms of public-private partnership in specific projects are: peculiarities of national legislation; investment risk distribution schemes; experience in organizing contractual relations necessary for partnership; industry affiliation of the project or type of activity; determination of the payer for the object's services and the consequences for him, depending on the chosen form (Table 4.10).

According to Art. 4 of the Law of Ukraine "On Public-Private Partnership", public-private partnership is used in various spheres of economic activity, taking into account their specific features (Law of Ukraine "On Public-Private Partnership", 2010).

In the mentioned spheres, the state cannot abandon its presence, and to resolve contradictions between the limited possibilities of the state budget and the need to invest capital to ensure the reproduction and development of objects of strategic and social significance in these spheres, it uses public-private partnerships in various spheres of economic activity, taking into account their specific features.

Thus, for the period from 2010 to 2022, engineering remained a priority for the state; collection, purification and distribution of water; health care; tourism, rest, recreation, culture and sports; ensuring the functioning of irrigation and drainage systems; production, distribution and supply of electric energy. In 2015 and 2019 (mostly) the state's priorities changed and, in accordance with the law, such areas as search, exploration of mineral deposits and their extraction were excluded; production, transportation and supply of heat and distribution and supply of natural gas; construction and/or operation of highways, roads, railways, airfield runways, bridges, overpasses, tunnels and subways, sea and river ports and their infrastructure (Chepelenko, 2021).

Table 4.10 – The main differences between forms of public-private partnership

Forms of public-private partnership	Characteristic features of the form					
	The subject of a contract between the state and private business					Form of property owner-ship (current / to be created)
	Joint financing	Operation	Construction	Technical re-equipping or modernization	Desig-ning	
State contract with investment obligations of private business	+	+	+			State
Rent		+		+		
Conce-ssion	+	+	expansion, reconstruction, technical re-equipping, moderniz-ation		+	
Participation in capital	share capital	+	+			Private / State
Agreement on distribution of products		+	+			
Contracts that include various types of work and relationships	+		+			
	+	+	+			

The vector of other spheres has also changed:

– waste treatment (specified for waste management, except for collection and transportation);

– real estate management (specified for the production and implementation of energy-saving technologies, construction and capital repair of residential buildings, completely or partially destroyed as a result of hostilities in the territory of the anti-terrorist operation;

– installation of modular houses and construction of temporary housing for internally displaced persons).

The scope of application of public-private partnership in the field of social services, management of a social institution, institution has been expanded; educational and healthcare services; management of monuments of architecture and cultural heritage.

It should be noted that according to Article 7 of the Law of Ukraine "On Public-Private Partnership" (Law of Ukraine "On Public-Private Partnership", 2010), the transfer of a public-private partnership object to a private partner, including its further reconstruction, restoration, major repair and technical re-equipment by a private partner, does not require the transfer of ownership of this object to a private partner does not terminate the right of state or communal ownership of such an object, and after the termination of the relevant contract in the manner stipulated by the contract concluded within the framework of a public-private partnership, such objects are subject to return to the state partner.

Regarding the general understanding of individual provisions of the status of objects of public-private partnership, attention should also be paid to the fact that:

– objects of the public-private partnership are reflected on the balance sheet of the private partner and are separated from its property, and the private partner, in relation to such property, applies separate accounting;

– objects of public-private partnership cannot be objects for which a decision on privatization has been made;

– public-private partnership objects cannot be privatized during the entire period of implementation of the public-private partnership;

– the use of land plots for the implementation of public-private partnerships is regulated by Article 8 of the Law of Ukraine "On Public-Private Partnerships" and must comply with normative legal acts of Ukraine.

The main sources of financing public-private partnership according to Article 9 of the Law of Ukraine "On Public-Private Partnership" are the

financial resources of the private partner; financial resources borrowed in accordance with the established procedure; funds from state and local budgets and other sources not prohibited by law.

Summarizing the study of the state of regulatory and legal support of public-private partnerships in Ukraine, one could note that:

– during the period of validity of the Law of Ukraine "On Public-Private Partnership" (2010-2020), significant changes took place (mainly in 2015 and 2019), which relate to the scope, form, object, ownership, etc. ;

– cooperation between partners can be carried out within the framework of different structures, with different competence, with a different set of tasks and funding sources;

– there is a large number of different models of application of public-private partnership for qualitative economic and social changes (Law of Ukraine "On Public-Private Partnership", 2010).

Among the forms of public-private partnership presented in Ukraine, there is also shareholding (corporatization) and the creation of joint ventures, and the degree of freedom of the private sector in making administrative and economic decisions is determined by its share in the share capital (Table 4.11) (BRDO, 2022; International Budget Partnership, 2022).

The dynamics of changes in the number of projects concluded and implemented in Ukraine on the basis of public-private partnership for 2012-2021 confirms the unchanged existing trend: contracts are concluded, but most of them are not fulfilled.

The rating integrated assessment of the effectiveness of the regulation of public-private partnership at the mesoeconomic level by regions of Ukraine in the social sphere proves that the highest places in the overall rating are occupied by Kyiv, Lviv, Kharkiv, Dnipropetrovsk, Odesa regions, while the lowest are Chernivtsi, Rivne, Donetsk, Zakarpattia, and Luhansk regions (Table 4.12) (Official website of the State Statistics Service of Ukraine, 2021; Chepelenko, 2021). Among 52 contracts based on public-private partnership, 18 were actually implemented in 2022, two of which are implemented in the field of health care in Kyiv and Lviv regions.

A study of the main areas of application of public-private partnership in foreign countries (Canada, USA, Germany, Portugal, Netherlands, Turkey) identifies infrastructure facilities, administrative services, education, medicine, information and communication technologies, energy, transport, water supply and drainage.

Table 4.11 – Forms of public-private partnership in Ukraine

PPP forms	The average term of the agreement	Provision of services or management	Provision of working capital	Making a net profit or covering a net loss	Long-term financing	Ownership of assets on legal grounds	Sectoral planning and regulation of services
Shareholding and financing of the private services market	Unlimited term	public sector	public /private sectors	public sector	public /private sectors	public sector	
Contract for the provision of services	2-3 years	private sector	public sector				
Management contract	2-5 years	private sector	public sector				
Leasing	7-15 years	private sector			public sector		
Build-Own-Transfer (BOT)	20-30+ years	private sector				public sector	
Build-Own-Operate (BOO)	20-30+ years	private sector					public sector
Concession	20-30+ years	private sector				public sector	
Disposal and sale of assets	Unlimited term	private sector					public sector

The study of problems in the field of health care and the analysis of public-private partnership in Ukraine allows us to draw the following conclusions:

firstly, statistics on the implementation of public-private partnership projects are unsystematic and fragmented, which makes it impossible for

the state to monitor the success of project implementation and market trends;

secondly, most public-private partnership projects are related to communal property, which should also contribute to the development of public-private partnership in regions (communities);

thirdly, objects of social and humanitarian infrastructure, especially in the field of health care, should become the most attractive for the use of public-private partnership mechanisms.

Table 4.12 – Results of the rating integrated assessment of the effectiveness of regulation of public-private partnership by region of Ukraine in social sphere

Region	Rating	Education	Health care	Culture, sports and tourism	Social welfare	Utilities	Transport and communication	Trade, food, services
Vinnytsia	9	7	16	4	7	24	10	12
Volyn	14	4	21	22	22	17	7	8
Dnipropetrovsk	4	10	8	12	12	2	8	2
Donetsk	23	24	24	24	2	8	15	24
Zhytomyr	15	2	15	17	15	25	18	10
Zakarpattia	24	23	20	23	25	7	21	17
Zaporizhzhia	6	19	5	14	4	5	14	6
Ivano-Frankivsk	17	15	13	10	13	13	20	21
Kyiv	8	22	22	16	8	3	4	1
Kirovohrad	18	11	6	15	19	20	22	15
Luhansk	25	25	25	25	5	16	25	25
Lviv	2	13	14	2	1	6	3	3
Mykolayiv	7	12	23	11	3	9	5	11
Odesa	5	9	19	5	16	10	2	5
Poltava	10	17	3	8	17	15	13	9
Rivne	22	14	17	20	9	23	12	23
Sumy	20	20	2	18	21	14	19	19
Ternopil	13	3	9	13	18	12	23	22
Kharkiv	3	6	4	7	20	1	6	7
Kherson	19	8	18	19	24	11	11	20
Khmelnytskyi	16	21	11	3	14	18	17	18
Cherkasy	12	16	10	9	11	19	9	16
Chernivtsi	21	1	12	21	23	22	24	14
Chernihiv	11	18	7	1	10	21	16	13
Kyiv city	1	5	1	6	6	4	1	4

Among the possible priorities in determining the public-private partnership strategy in the field of health care may be diagnostics, blood donation, transplantation, dialysis, oncology, cardiovascular diseases, medical education, primary care and pediatrics.

The implementation of public-private partnership mechanisms in Ukraine is not only a prerequisite for attracting additional financial resources, but also for innovative impulses in the field of health care with the aim of creating a new organizational model of the health care system, which is able to combine public and private medicine and is based on the basic principles of the health care system should be laid down.

Such a partnership has a powerful multiplier effect for the entire economy of the country, which consists in creating conditions for the preservation and reproduction of human capital, the attraction of innovative technologies, the development of the medical and pharmaceutical sectors of the economy, the creation of jobs and the development of related sectors of the economy, the preservation and expansion of the network of state medical institutions (municipal) property, the destruction of corruption in the sphere of health care, the growth of the authority of the state at the international level, the growth of direct foreign investments and the development of the institutional capacity of the financial system and public administration.

4.10. Impact of the COVID-19 pandemic on public health financing in Ukraine[4]

The coronavirus disease (COVID-19) pandemic has become a catalyst for critically needed transformations in both the organizational and financial foundations of ensuring the functioning of the health care system. In Ukraine, the COVID-19 pandemic partially overlapped in time with the transition to the second stage of the fiscal decentralization reform, as well as the implementation of the health care system reform. In this regard, the comprehensive research of the peculiarities of the change in the model of financial support of the health care system in Ukraine in the conditions of the decentralization reform and the COVID-19 pandemic is gaining relevance.

[4] This research was funded by the Ministry of Education and Science of Ukraine, grant numbers 0122U000778, 0122U000781

The experience of the decentralization reform of Ukraine involves several components, including the reform of the administrative and territorial system, designed to optimize the composition and structure of local communities in order to increase both the quality and financial efficiency of the provision of public services, as well as fiscal decentralization – one of the key tasks of which is the creation of financially self-sufficient united territorial communities. At the same time, the reform of administrative-territorial and fiscal decentralization is impossible without reforms in related areas, including the reform of the health care system. The reform of the health care system, which began in Ukraine in 2016, is designed to eliminate the significant shortcomings of this sector, the main ones of which can be identified as the following:

– an unreasonably expanded network of hospitals, a large part of which was characterized by low capacity of the material and technical base, which was a significant obstacle to the provision of quality medical services;

– ineffective spending of budget funds, which consisted in directing these financial resources not to pay for specific services to a specific patient, but to ensure infrastructure maintenance;

– a noticeable shortage of qualified personnel, which is caused by an unsatisfactory level of remuneration and low interest of young people in choosing the profession of a doctor, etc.

Taking into account the above, the main task of this study is to analyse the trends of changes in the dynamics and structure of health care expenditures both during the period of implementation of the decentralization reform and the reform of the health care system, and during the pandemic period (2020-2021). The corresponding analytical data are presented in Figures 4.25-4.32.

So, according to the data presented in Figures 4.25, 4.26, it can be noted that during the period of active implementation of the reform of fiscal decentralization and reform of the health care system (2015-2018), the share of health care expenditures in the State Budget of Ukraine was relatively stable and fluctuated within 2 %, while in 2019 an increase in the share of this group of expenditures was recorded by 56.35% to the level of almost 3.6% of the total expenditures of the State Budget of Ukraine. It is worth noting that it not the implementation of the fiscal decentralization reform and health care reform but the COVID-19 pandemic led to an almost threefold increase in this group of expenses in the overall structure in the pandemic years of 2020-2021, which is a completely natural

consequence of the unfolding of this crisis. It is also worth noting that in 2022 a reduction in the specific weight of health care expenditures in the structure of the State Budget of Ukraine was recorded, which is connected both with a decrease in the intensity and scale of destructive pandemic processes, and with the need to restructure state expenditures in connection with the full-scale invasion of the Russian Federation into Ukraine.

It is worth noting that in 2022 health care expenditures amounted to UAH 215.3 billion, including state budget expenditures together with transfers – UAH 187.2 billion. The dominant share of budget funds was directed to the implementation of the medical guarantee program, for which UAH 146.3 billion was allocated, namely:

– UAH 143.9 billion – for payment of medical services under the medical guarantee program;

– UAH 2.4 billion – for reimbursement (reimbursement of the cost of medicines) for the treatment of cardiovascular diseases, diabetes, chronic respiratory diseases, mental and behavioural disorders. More than 3.8 million people received medicinal products with full or partial reimbursement of their cost;

– UAH 11.6 billion – to ensure public health measures (implementation of state infection control and epidemiologic surveillance, laboratory, instrumental, and diagnostic research and testing);

– 8.6 billion UAH – centralized procurement of medicines and medical products, high-value medical equipment for equipping healthcare institutions (Ministry of Finance of Ukraine, 2023).

In turn, according to the data in Figure 2, it is appropriate to note that parallel to the growth of health care expenditures in the structure of expenditures of the State Budget of Ukraine, there was a reduction in the specific weight of this item of expenditures in the expenditures of local budgets of Ukraine. Thus, during 2015-2019, their share has been gradually decreasing by 3-5% annually, then in 2020-2021, the intensity of these processes increased significantly, and the reduction amounted to almost 33% and 45% compared to the level of the previous year, respectively. It should also be noted that during 2021-2022, the specific weight of health care expenditures in the structure of local budget expenditures stabilized to some extent: in 2021, this indicator was 5.81%, and in 2022 – 5.59%. Thus, it can be noted that the full-scale invasion created a threat to a greater extent for those health care institutions, the financing of which was provided by the funds of the state rather than local budgets.

Despite the existence of diametrically opposite trends regarding the level of financing health care expenditures from the state and local budgets, it is expedient to analyse the generalized trend by identifying fluctuations in share of health care expenditures in the expenditures of the Consolidated Budget of Ukraine (Figure 4.27).

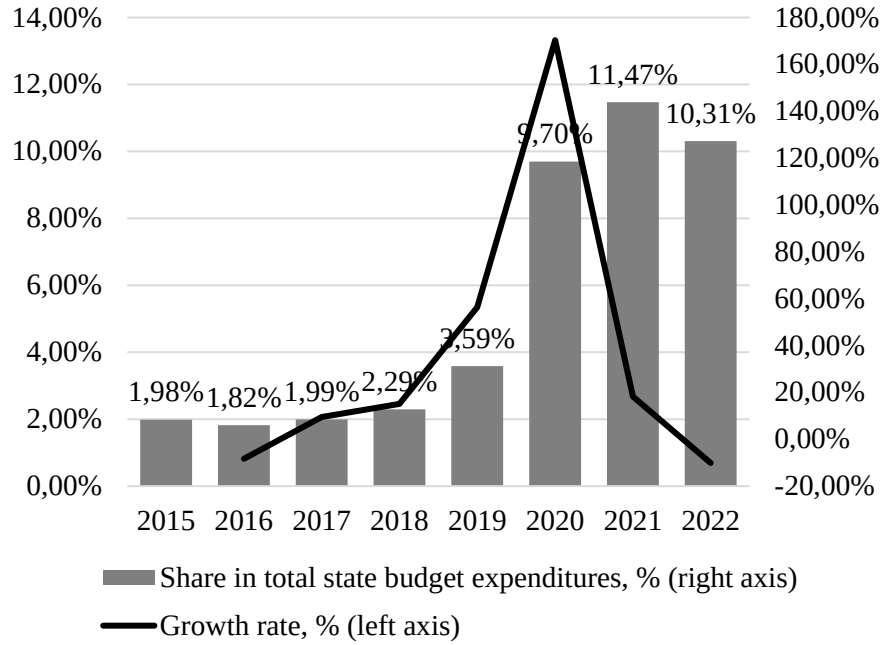


Figure 4.25 – The specific weight of health care expenditures in the expenditures of the State Budget of Ukraine (left axis) and the dynamics of its change (right axis) for 2015-2022.

Source: built by the author based on the State Treasury Service of Ukraine (2023)

According to the results of the analysis presented in Figure 3, it can be noted that the specific weight of this group of expenses in the consolidated budget is relatively stable and fluctuated during 2015–2021 in the range from 9% to 11.1%. However, in 2022 a sharp decrease of the analysed indicator was recorded to the level of 7.38%. Thus, it can be concluded that the COVID-19 pandemic did not cause such a critical burden on the Consolidated Budget of Ukraine as it did on the State

Budget, but the war in Ukraine triggered the reduction of this item of expenditure in the structure of the Consolidated Budget of Ukraine.

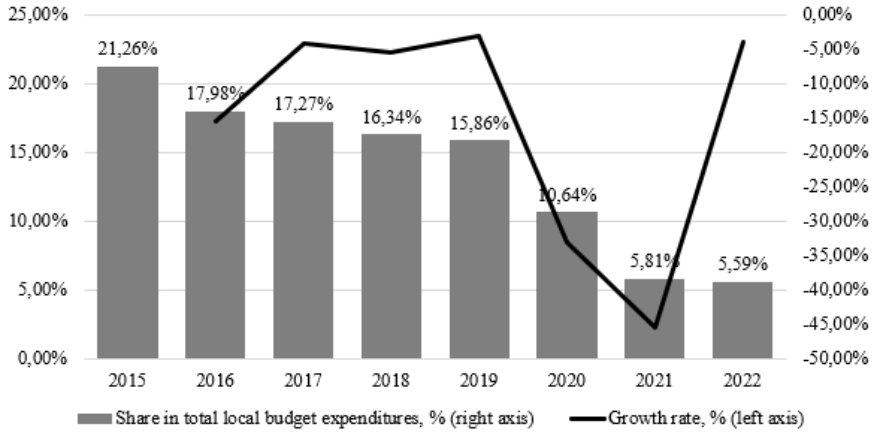


Figure 4.26 – The specific weight of health care expenditures in the expenditures of local budgets of Ukraine (left axis) and the dynamics of its change (right axis) for 2015-2022.

Source: Built by the author based on State Treasury Service of Ukraine (2023)

In addition to the general structure of health care expenditures in the structure of different levels of the budget system of Ukraine, it is also advisable to analyse the dynamics of various groups of expenditures (Figures 4.28-4.32).

Analysis of the dynamics of the specific weight of current health care expenditures in GDP (Figure 4.28) during 2000-2023 proves the existence of a certain correlation with the main trends of socio-economic transformations in the country. Thus, the stabilization of economic processes in Ukraine during 2000-2003 was accompanied by progressive growth of current health care expenditures, while in 2004-2006 this growth trend somewhat slowed down and stabilized. The deterioration of macroeconomic dynamics in the period after the global financial crisis led to a natural reduction of this expenditure item in 2008, which is justified by the need to redistribute expenditure powers to stimulate economic recovery and absorb the negative consequences of the financial crisis. With the

beginning of the reform of fiscal decentralization (2015) and the reform of the health care system (2016), there was a noticeable increase in the current health care expenditures to GDP ratio, which continued even during the unfolding of the coronavirus disease pandemic.

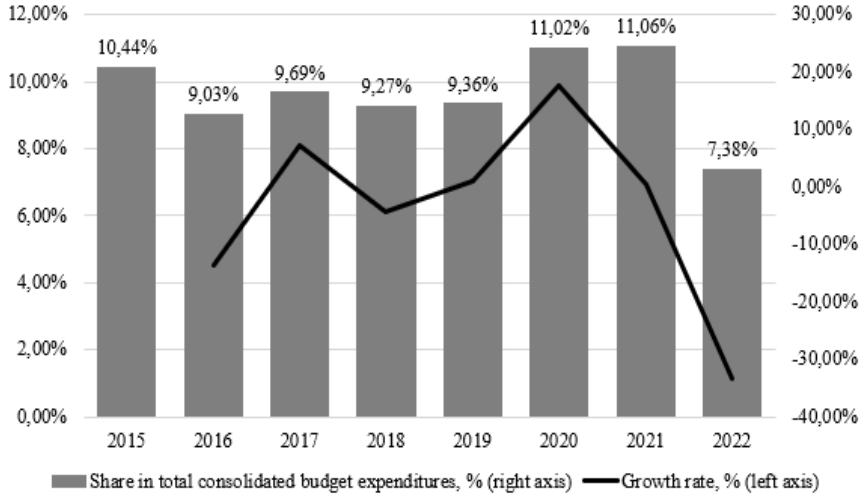


Figure 4.27 – The specific weight of health care expenditures in the expenditures of the Consolidated Budget of Ukraine (left axis) and the dynamics of its change (right axis) for 2015-20212.

Source: Built by the author based on State Treasury Service of Ukraine (2023)

The analysis of the dynamics of the specific weight of capital health care expenditures in GDP (Figure 4.29) allows us to conclude that this item of public expenditures is of low importance, since the specific weight of this group of expenditures in GDP did not exceed 0.5% during the entire period of analysis. A relatively high share of funding for the development of infrastructural capacities of the health care system was in 2004, 2007, 2008 and 2015. It should be noted that neither the reform of fiscal decentralization nor the reform of the health care system provoked a significant increase in the share of capital expenditures on health care in GDP. At the same time, it can be noted that in the conditions of the unfolding of the coronavirus disease pandemic and the full-scale invasion to Ukraine, this indicator continues to remain stable.

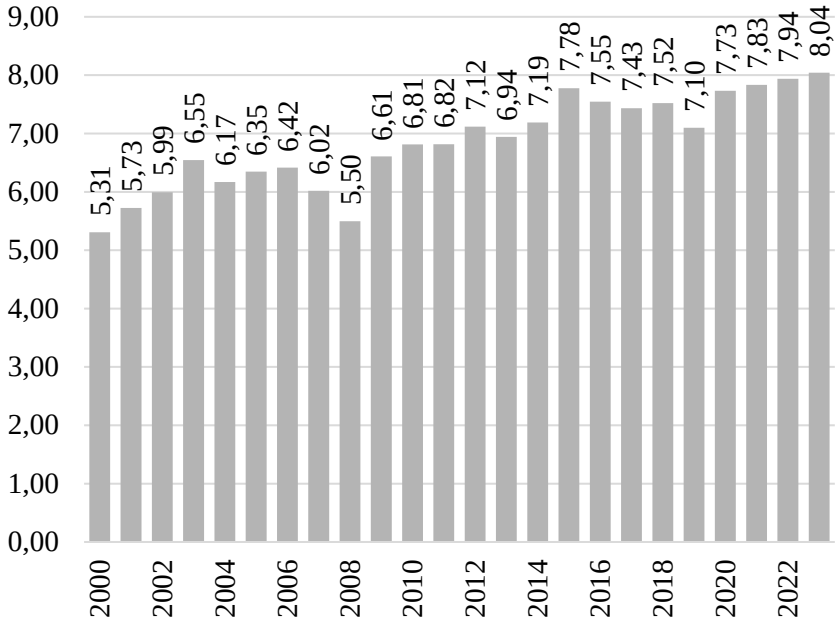


Figure 4.28 – Dynamics of current health expenditure to GDP ratio in Ukraine in 2000-2023 (2023 – extrapolated data based on existing trend), %

Source: created by the author based on the World Bank Databank (2023)

An in-depth analysis of the structure of current health care expenditures in Ukraine during 2000-2023 (Figure 4.30) confirms the existence of relative parity between current domestic public and private expenditures on health care. In particular, during 2000-2009, there was a gradual increase in the share of current government health care expenditures, while since 2010, the opposite trend towards a reduction in their share in favour of current private health care expenditures has been recorded. It is worth noting that starting from 2013 and until now, there has been a slight predominance of domestic private expenditures in the structure of current health care expenditures. Thus, during 2013-2023, the share of private health care expenditures in the structure of current expenditures fluctuates within 44-48%, while the share of government expenditures is within the range of 51-54%. It should also be noted that with the start of the reform of fiscal decentralization and health care reform

in Ukraine, an increase in the specific weight of external health care expenditures in the structure of current expenditures is observed. In particular, this indicator fluctuated during 2015-2023 in the range of 0.68-1.72%, reaching its maximum value precisely in the first year of the fiscal decentralization reform. Basically, according to data of the Ministry of Finance of Ukraine (2023), the involvement of international financial aid in 2022 contributed to the stable financing of the medical guarantee program and, accordingly, allowed the timely payment of wages to more than 500,000 employees of medical institutions.

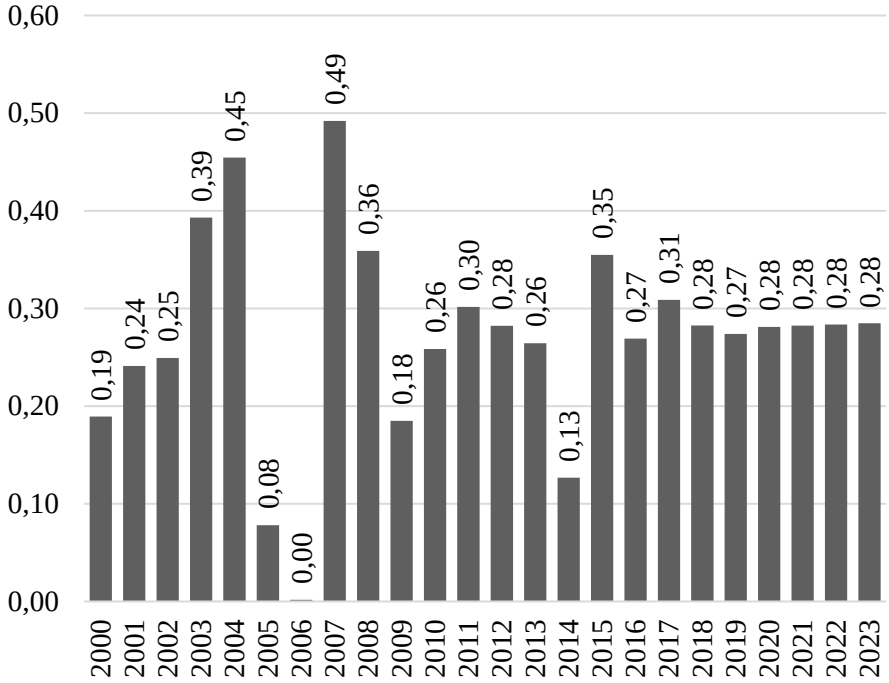


Figure 4.29 – Dynamics of capital health expenditure to GDP ratio in Ukraine in 2000-2023 (2023 – extrapolated data based on existing trend), %

Source: created by the author based on the World Bank Databank (2023)

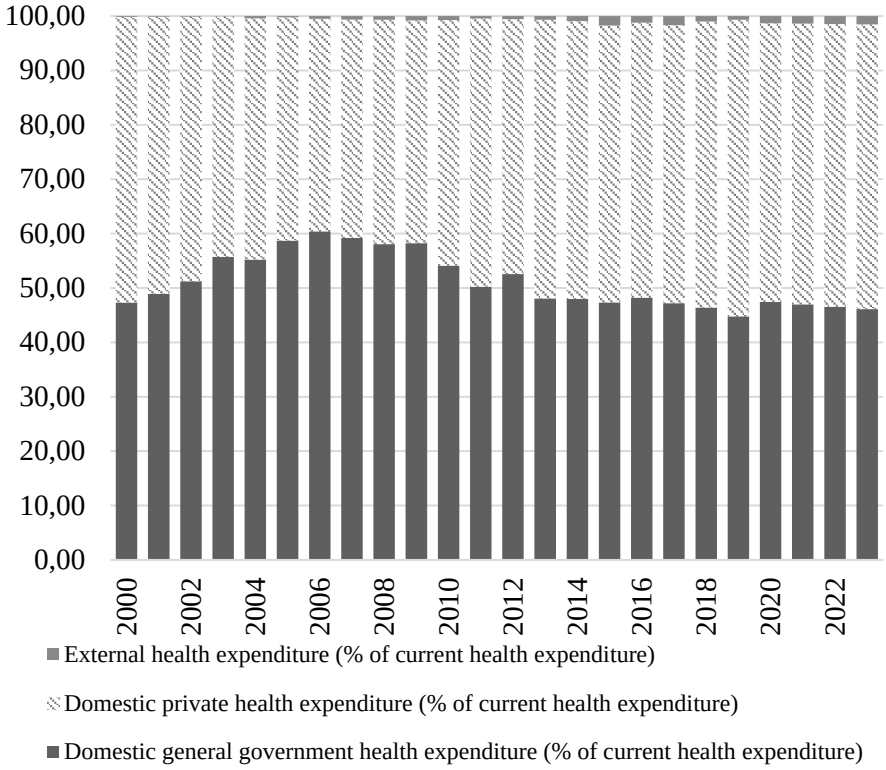


Figure 4.30 – Dynamics of the structure of the current health expenditure in Ukraine in 2000-2023 (2023 – extrapolated data based on existing trend), %

Source: created by the author based on the World Bank Databank (2023)

Thus, it is worth noting that the structure of current health care expenditures is largely influenced by interventions related to the reform of the fiscal decentralization and the health care reform, while the influence of the general socio-economic situation in the country and crisis processes (the COVID-19 pandemic, a full-scale invasion) had a less relevant effect on the dynamics of the researched parameters.

An important vector for determining the impact of pandemic processes on the transformation of the model of financial support of the health care system is also the analysis of the dynamics of out-of-pocket expenditures paid for the relevant services by individuals (Figures 4.31, 4.32).

Thus, according to the data in Figure 4.31, it can be noted that during 2000-2007, the specific weight of out-of-pocket expenditures in the structure of current health care expenditures decreased, which indicates the prevalence of state or insurance sources of covering the costs of medical care for the population. However, after the global financial crisis, there was a gradual increase in the importance of this group of expenses, which to some extent may be due to a shortage of centralized financial resources for the execution of relevant spending orders.

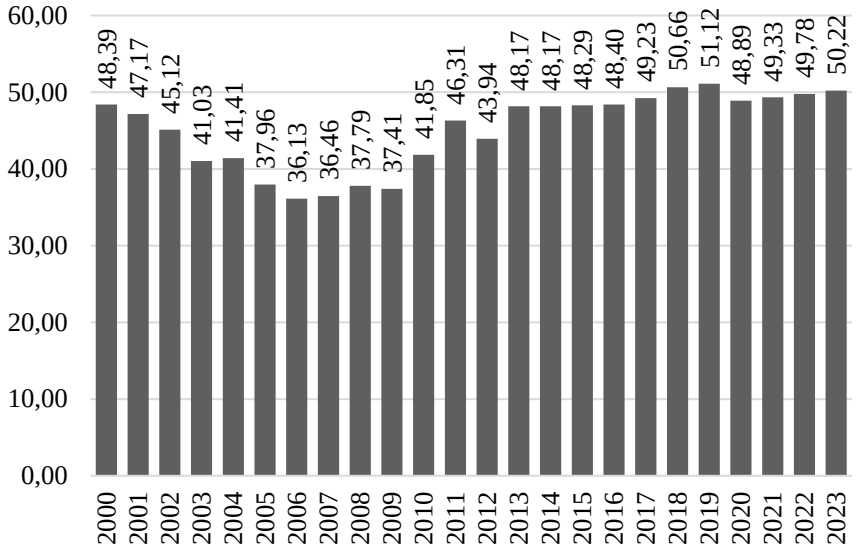


Figure 4.31 – Dynamics of Out-of-pocket expenditure to current health expenditure ratio in Ukraine in 2000-2023 (2023 – extrapolated data based on the existing trend), %

Source: created by the author based on the World Bank Databank (2023)

At the same time, with the beginning of the reform of fiscal decentralization and health care reform in Ukraine, the specific weight of this group of expenses stabilized, and at this stage the share of out-of-pocket expenditures for health care is almost half of all current health expenditure provided for this purpose.

In addition, the analysis of the structure of out-of-pocket expenditures in the total private expenditures on health care (Figure 4.32) confirms the significant prevalence of these expenditures in the

corresponding overall indicator. On average, share of the out-of-pocket expenditures in the domestic private current health expenditure for the entire period is 93.58%, which indicates a low level of development in Ukraine of other private sources of financing current health care expenditures (for example, health insurance). Instead, the main burden of private expenditures falls precisely on the individuals.

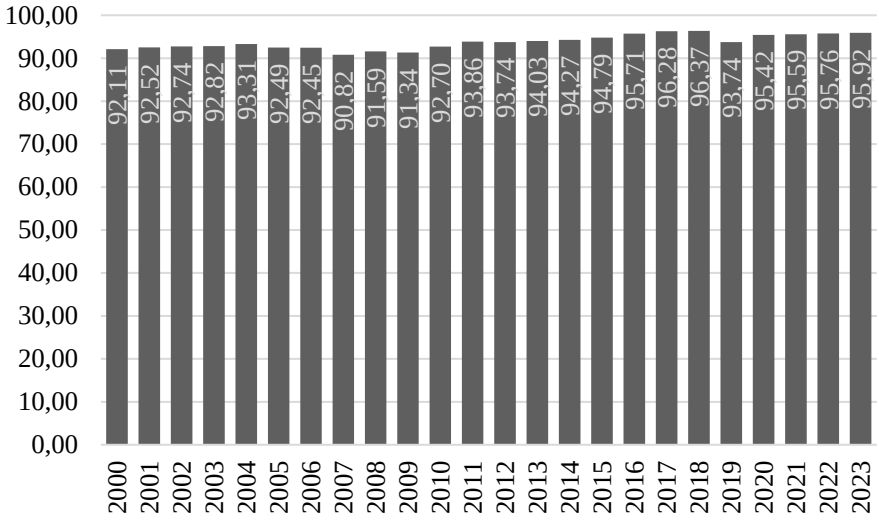


Figure 4.32 – Dynamics of Out-of-pocket expenditure to domestic private current health expenditure ratio in Ukraine in 2000-2023 (2023 – extrapolated data based on the existing trend), %
Source: created by the author based on the World Bank Databank (2023)

In general, according to the results of the analysis, it can be noted that the reform of fiscal decentralization and the reform of the health care system did not lead to such a critical transformation of the structure of spending powers in the field of health care at any of the levels of the budget system of Ukraine, but a significant impact on this parameter was provoked by namely the pandemic of the coronavirus disease. At the same time, the dominant share of the expenditure burden fell precisely on the State Budget of Ukraine, while local budgets did not bear this burden in a proportional measure.

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Chapter 5
THE ROLE OF MARKETING AND TECHNOLOGY IN HEALTHY DEVELOPMENT: EUROPEAN AND UKRAINIAN EXPERIENCE

5.1. Formation of Ukraine's brand in the context of integration into the EU: current realities

Globalization of the world economy, increased international competition, and the intensification of innovative processes require new approaches to Ukraine's socio-economic development. The international community perceives Ukraine as a country with political instability, corruption, and economic difficulties.

Promoting national interests and the «Ukraine» brand is a strategic investment in the future. Ukraine has significant potential for development, but at the same time faces complex challenges, such as military aggression from the Russian Federation, an economic crisis, corruption, and other socio-political problems. However, despite these challenges, Ukraine has opportunities to develop its brand and be positively perceived on the international stage.

The success of economic growth and dynamic development of relations with other countries largely depends on how the country's brand is formed and promoted on the domestic and global markets. For Ukraine, national branding can become one of the ways to build the economy and support it at an adequate level in the system of global economic relations (Kuksa, 2017).

The need for a unique and distinctive image for countries of the world, just like for any company that enters the international arena, has become very acute. After all, countries and territories also offer foreign companies and foreign citizens a product, namely themselves as a center for tourism, a favorable place for doing business or investing money, a supplier of quality goods, and so on.

In order to attract money from abroad, a country must have a unique, original, recognizable, positive - all that forms the concept of a brand. Several countries and territories have already created such brands and now, according to all the rules, conduct marketing campaigns to promote them both among their citizens and abroad (Kyrylov, 2013).

The question of the national brand and its connection to the country's competitiveness still requires theoretical study and in-depth analysis of the formation of an effective strategy for promoting the national brand and the development of a scientific and practical basis for its use in building the model of Ukraine's national brand. The formation of a national brand in the face of globalization is a complex process that requires comprehensive research and analysis. National branding aims to overcome the deficit of material and non-material resources in the region, and is based on the idea of conveying to the wider public the uniqueness of the territory.

The issue of forming Ukraine's national brand is becoming increasingly relevant both in the context of its European integration and due to the globalization process. For Ukraine, promoting its own national brand is an extremely important issue today. Based on the need to protect its territorial integrity and reorient towards the European integration vector, the question of forming a national brand becomes even more urgent, which determined the relevance of this study.

Territorial branding is not an end in itself; it should serve as a tool for improving the quality of life of local residents, promoting the growth of production and export capabilities of the region. The main goal of regional branding is to establish mutual understanding and interaction between the authorities and citizens who live in the same informational and geographical space, creating territorial identity.

Drawing on the modern scientific base and using the latest branding technologies, Ukrainian regions are capable of reaching a new level in their economic and socio-political development and making a significant contribution to the development of Ukraine's overall image (Drozdovskyy, 2018).

Branding (national) is the process of creating and promoting a country's brand on the market, a traditional element of economic marketing that entered the scientific discourse and Political Sciences only in the 1990s, thanks to two outstanding British experts in the field of branding - Wally Olins and Simon Anholt (Nagornyak, 2008).

Since then, political science has accumulated a certain amount of experience, including national branding, which, in general, can be accepted as a theory of national branding. In addition, such scientists as I. Rein, F. Kotler, J. Fen, E. Yaffe, I. Nebenzahl, M. Aronchik, P. van Hem, D. Sondi, G. Hankingston, G. Soros, J. Stiglitz, I.O. Bilyus, T. Tsygankova studied the issues of national branding. The question of national branding as a tool for increasing competitiveness was addressed in their works by M. Porter,

I.O. Parfenchuk, H.G. Polishko, Z.S. Liulchak, Yu.I. Halushchak, O.E. Herbera, R.Yu. Mylyan, T.M. Melnyk, A. VariBrusova, L.P. Antonyuk, O.M. Sobko, I.M. Boichyk, S.A. Romaniuk, H.Ya. Studynska, Kanani K. M. Lee, Z.M. Yaremko, T.V. Smachylo, D.I. Olekha, etc.

Simon Anholt clarifies that country branding is a systematic process of coordinating the actions, behavior, investments, innovations, and communications of a country to implement its national security and competitive identity strategy (Anholt, 2007).

The development of modern brand management makes it possible to transform the country's image into a resource for its development. This is confirmed by authoritative international experts and the experience of those politicians who have mastered branding skills. If we look at the state as a whole or at its individual institutions, they are brands in their pure form.

The state is a brand with its identification symbols: flag, anthem, coat of arms, president or first persons of the state, power structure, portrait of a typical representative of the population, news messages (which are essentially advertising messages promoting the brand «country»), opposition, etc. All that a consumer of the information field encounters.

The brand of a country is a set of emotional and rational perceptions that influence the formation of a certain image of the country. If we compare a brand to an image, the former concept is more stable. The image of a country is a variable component of a brand, meaning the perception that they try to influence for the purpose of change.

A country brand is a comprehensive trade proposition - an emotionally powerful trade mark that includes not only the name or design, but also a whole complex of associations and identifications through which it is perceived by consumers. According to the World Tourism Organization, a country brand is a set of emotional and rational perceptions that result from the comparison of all the characteristics of the country, personal experience, and rumors, which influence the creation of a certain image.

The country brand is an image that is formed in relation to the country among foreigners, tourists, investors, and other stakeholders. It can reflect the cultural, historical, natural, and economic aspects of the country, as well as its level of development and competitiveness in the international market (Nagornyak, 2008).

Research by many scholars suggests that countries with a positive national brand exert much less effort to protect national interests and attract foreign investments than those that do not have it.

The national brand is formed based on a vividly expressed positive image of the territory, which is based on the unique opportunities to satisfy the demands of its consumers. At the same time, the national brand is the most important factor in a country's competitive advantage and revenue, and a valuable asset of the economy (Anholt, 2007).

– There are two approaches to the direction of the state brand:

– The state brand is considered an outward-oriented phenomenon. It is a carrier/conductor of ideas about a particular country to the outside world.

The state brand is both inward- and outward-oriented. National branding is a form of national discourse in a global context. The state brand is disseminated through logos, slogans, and information campaigns, but this is not enough. Its perception and constant relay by citizens of all social strata are also important.

According to British researcher S. Anholt, a country's brand entails perceptions of the country based on indicators such as:

– Wealth of cultural and historical heritage.

– Effectiveness of government management.

– Investment prospects of the country.

– Quality of exported goods.

– Population of the country (human capital).

– Tourism (tourism potential) (Anholt, 2007).

The Ukrainian brand is an important aspect of integration into the EU as it can influence the perception of the country among European partners and affect decisions regarding investment, tourism, and other forms of cooperation. Successful integration into the EU requires the creation of a positive image of Ukraine that reflects its potential and advantages for foreign stakeholders.

When the name of a country (country brand) is mentioned, it immediately triggers a whole chain of associations regarding that country. The set of associations that citizens of the country cherish, carefully inherit and present, and through which the world identifies the country, can make the national idea in this state effective, its national leader successful, its national security stable, and the country itself an equal player in world processes.

It is no coincidence that the economic concept of brand competitiveness has entered the discourse of political and academic circles in the United States, Europe, Japan, and now dominates the speeches of political leaders of the leading states of the world.

It is well known that a country's relations with other countries in the world and its economic prospects depend on how its country brand is formed, how it functions domestically, and how it advances in the foreign policy market (Nagornyak, 2008).

Country brand is a necessity as well as an opportunity to earn money and establish a certain political status on the global stage. With talents and capital becoming increasingly mobile, a country's image and reputation, its brand, can have a significant impact on its economic state. How a country is perceived can play a decisive role in the success of businesses, trade, or tourism, and also determines diplomatic and cultural relations with other countries.

Countries that have established their own brand today use it as a tool to increase attractiveness and conduct full-scale national and international marketing campaigns. The brand of each country consists of many criteria and components that individualize and differentiate it from others. Brand value can be assessed, for example, by the number of visits to the country, tourist feedback, the number of students who wish to study in educational institutions, or the desire to do business there.

However, simple «associations» are not enough, so there are two most well-known national brand indexes: the Anholt Ipsos Nation Brands Index and the FutureBrand Country Brand Index. The Anholt Ipsos Nation Brands Index is an index developed by Simon Anholt as a way to assess a country's image and reputation in the world and track the dynamics of growth or decline in indicators. For the Anholt Ipsos Nation Brands Index (NBI) research, over 20,000 online interviews are conducted in 20 countries among people aged 18 and over.

The Index measures the strength and quality of each national branding program by combining six parameters: management, culture, people, tourism, immigration, and investment. The Future Brand Country Brand Index is a global study of the strength of national branding, covering 113 countries worldwide. It is the largest study of its kind and is trusted by many national territorial development agencies. The research is conducted by Future Brand.

The Index is based on a large number of questions and responses from respondents and covers a large number of countries. Experts measure awareness, knowledge, preferences, content, promotion, desire to visit, and cooperate with the country and its residents. The most important parameters are the aspects that really differentiate country brands -

indicators in five key areas: values, quality of life, business environment, heritage, culture, and tourism.

The purpose of research that underlies the formation of such indices is to measure a country's «intangible assets.» These results help governments develop their brand concepts and plan their policies, build innovation and investment strategies to improve their national reputation.

Countries that consistently invest in their brand better withstand shocks and maintain their place in the world, despite economic uncertainty, controversial headlines, populist policies, and even pandemics (Tsvok, 2021).

For Ukraine, the formation of an effective policy and its own brand on the world stage has significant importance. This is a question of competitiveness. Usually, consciously national brands are formed by well-known international companies and relevant experts who often work on a tender basis.

The foreign policy departments of developed countries apply various strategies of traditional, network, image, and media diplomacy to implement their political tasks and persuade the world community of the correctness of their foreign policy strategies. The goal of national branding often becomes the creation, correction, and presentation of a viable positive image of the country around which the state-nation itself will consolidate and reproduce promising vectors of international policy.

It should be remembered during branding that it aims not only to create a rainbow wrapper but also serves to harmonize the object and its perception by the subject. In the world of big politics, the perception of the subject (consumer) is quite important, so the properties of the object must be created in precise accordance not only with the developed national security strategy but also taking into account the requests of the audience of consumers - residents of another country.

A country with a brand of «armed forces» should be presented as a state with inviolability of borders, peaceful citizens, and a school of dedication of young men to become men, rather than as a «horror of war and the faces of the dead» where no mother who respects herself would send her child. A study of foreigners' perception of Ukraine and its inhabitants conducted by the International Sociological Association in the EU and the US showed that Ukrainians are perceived there as cheerful (27%), educated (16%), and kind (15%), while considering the country they live in unstable, crisis-ridden, and corrupt (62%) (Nagornyak, 2008).

Realizing this, the majority of Ukrainians support the idea of creating national branding programs to form the «Ukraine» brand. Moreover, almost half of the respondents agree with the statement that the program should be aimed primarily at changing the attitude of Ukrainians towards their own country. In the minds of a third of the population of Ukraine, their country is associated with political scandals, while for most respondents, Ukraine is associated with the beauty of its women.

Many respondents believe that emphasis should be placed on this, as well as on natural and human resources, the hard work and hospitality of Ukrainians, when creating the country's image. Only nine out of a hundred suggest paying attention to the country's scientific potential when promoting the brand.

Funding the work on creating the brand of Ukraine can be considered a classic example of a win-win situation. Investing in the country's brand is beneficial to everyone: the government, business, and society.

Experience of developed countries shows that the government should take on approximately 10-20% of the total budget. At the same time, business can be the main sponsor, since it benefits the most from a positive image of Ukraine, followed by the state and the population. Powerful Ukrainian companies, as well as foreign investors in the Ukrainian economy, are capable of supporting this process. Such business organizations as the European Business Association, the American Chamber of Commerce, the Ukrainian Union of Industrialists and Entrepreneurs, the Ukrainian Chamber of Commerce and Industry, and bilateral chambers of commerce could play a significant role.

Business can act as an initiator of creating a fund that would finance the implementation of the national program «Brand Ukraine». In such a process of national branding, Ukrainian, Russian, European, American, Cypriot companies, as well as enterprises from other countries that have their own business activities on the territory of our state, could offer their contribution, thus accelerating the development of Ukraine's economy. In addition to money, they could also invest their knowledge, connections, and international experience.

The national program «Brand Ukraine» should have a broad goal - to create a recognizable positive image of the country in the world, promote the emergence and spread of Ukrainian national identity, a sense of purpose and national pride that consolidates the country around the brand «Ukraine». The basis for such consolidation is the components of the «Ukraine» brand.

Simon Anholt proposes the following parameters for shaping and evaluating the country's brand: tourism (the attractiveness of the country's image); people (people as potential managers and people as potential friends - the country's social capital); culture and heritage (national symbols and readiness to consume the country's commercial culture, sports); exports (which country and what we export, how information about the producer affects its purchasing power, the value of the country's brands); management (the state of domestic policy); investments and immigration (the desire to live and work in this country, how much education received is valued, problems of youth employment and the labor market in general, the country's economic situation).

The key moment in determining the strategy for promoting the country's brand on the world market is its configuration, so national branding should begin with choosing the form of the country's brand that most clearly and fully corresponds to the character of the external positioning of the nation-state and the mentality of its population.

Head of Brand Ukraine, Maria Lypiatska, talks about how the brand of Ukraine has changed in the world with the start of the full-scale invasion, and what everyone can do to strengthen and improve it (Lypyatzka, 2022).

The most important rule when working with national country brands, which the Brand Ukraine team has learned over the years of working with the Ukraine brand, is that a brand cannot be built artificially - it must be authentic and real.

A country's brand is formed based on what the country does on the international stage, and then based on how it communicates. And that is exactly what happened in the case of Ukraine. The fight for freedom - not only its own, but also for the world - unity and resilience inspired the whole world, which contributed to the growth of positive perception of Ukraine.

A strong national brand and reputation now guarantee Ukraine international support and solidarity. In the future, this will become the foundation for the reconstruction and development of Ukraine, which, with victory, will be converted into investments in post-war recovery, tourist and educational flows, attracting global talent, opening offices of international companies, and deepening trade (Fig. 5.1).

To achieve this, systematic work with the national brand is needed to consolidate and strengthen the results we already have. The goal of systematic work with the brand is to bridge the gap between what the country really is («identity»), what foreigners think about it («image»), and

how the country wants to be known in the world («brand» or «desired reputation»). (Ukraine's Brand Attributes Tracker Research conducted by Looqme for Brand Ukraine, 2022).

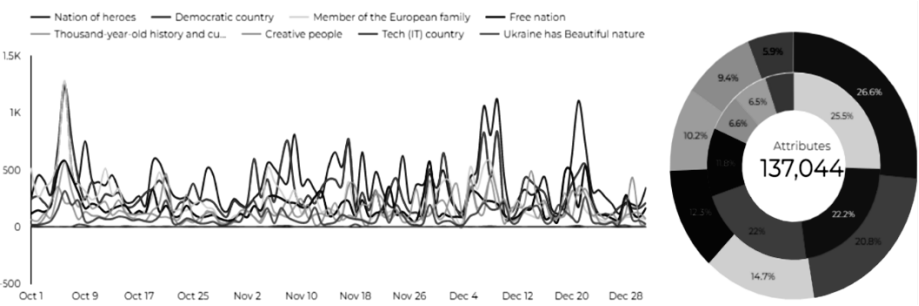

Figure 5.1 – Reputational attributes (Ukraine's Brand Attributes Tracker Research conducted by Looqme for Brand Ukraine, 2022)

In general, 58% more reputational attributes were found compared to the previous quarter. Only the Member of the European family attribute showed a significant increase and took the first place among all attributes in the studied quarter.

The Nation of heroes and Democratic country attributes share the second place. The Free nation attribute was in third place.

Ukraine strengthened its brand in 2022, as evidenced by the world's attention and support. At the beginning of 2023, Brand Ukraine prepared a «Report on Perception of Ukraine in the World in 2022» - a comprehensive analysis of how Ukraine is perceived abroad, based on data from leading international and Ukrainian analytical research companies.

One of the key findings of the report is that awareness of Ukraine worldwide increased from 51% to 71%. And it's not surprising - Ukraine was at the center of attention in 2022, with 79% of the world's population aware of news from Ukraine. By comparison, the average level of awareness of news from countries is 33% (Nation brands, 2022).

Brand Finance also recorded a 24% increase in Ukraine's influence and a 12% increase in its reputation. In the sub-ranking of countries by influence on the international stage, Ukraine ranked 14th out of 85 countries, rising 19 places (Fig. 5.2).

Political influence was rated at 54 out of 100 points, and military strength at 65.6 points. Ukraine's perception as a member of powerful

international alliances has tripled compared to 2021 (according to U.S. News Best Countries Rankings 2022).Ukraine's national brand strengthened by 5 points. From the first days of the full-scale war, Ukraine used communication and soft power tools to gain international support and counter Russian propaganda. Every Ukrainian can help Ukraine develop its national brand (Nation brands, 2022). At the same time, although the war has wrought catastrophic humanitarian and economic devastation on Ukraine, causing its brand value to drop by US$22 billion from US$107 billion to US$85 billion, the nation has successfully defended its independence and won the support of allies internationally, resulting in a significant increase in its brand strength.

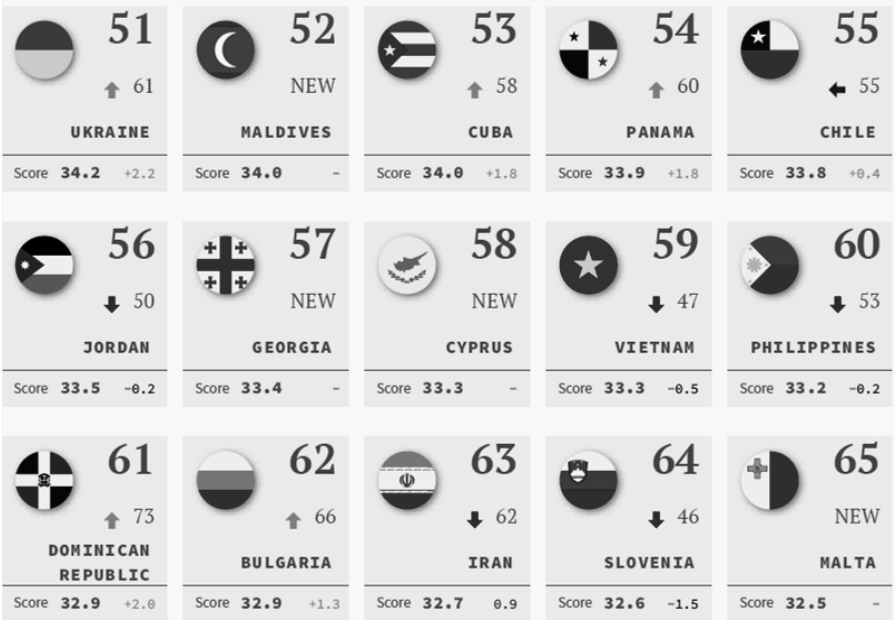

Figure 5.2 – Global Soft Power Index 2022 (Nation brands, 2022)

In addition to calculating brand value, Brand Finance also determines the relative strength of nation brands through a balanced scorecard of metrics evaluating brand investment, brand perceptions, and brand performance. Ukraine's brand strength score has gone up by over 5 points

year on year from 52.8 to 57.9 out of 100, driven mostly by a 15% increase in brand perceptions.

Research carried out by Brand Finance in March 2022 saw Ukraine increase in familiarity, reputation, and influence, in addition to other metrics such as respected leaders, rule of law and human rights, and trustworthy media (Nation brands, 2022).

Today, we are witnessing progress in creating a positive image of the state, which speaks to the understanding of the importance of the country's brand. The dominant association with Ukraine remains war, followed by characteristics such as beautiful, brave, and strong.

Under any circumstances, the creation and development of the Ukrainian brand should be considered an example of a win-win strategy, where representatives of state structures and businesses interact and cooperate with each other.

As mentioned earlier, developing a brand requires not only financial resources but also investment in knowledge, talent, and creativity, which we call the intellectual component of the country's brand. It is the source of competitive advantages in the future.

The intellectual component of the brand of every country is formed thanks to talents, creativity, and achievements in the field of science and technology. Talents that create innovations and change the economy are now competing globally for this.

The competencies of each individual, the spread of culture and respect for intellectual property, and understanding the basics of intellectual property among people who generate and consume it are the characteristics that can make a country's brand stronger (Tsvok, 2021).

In order for Ukraine to obtain at least a presentable form of its national brand, a clear National Security Strategy is needed, based on a vividly and clearly formed national brand, the promotion of which would be carried out both outside Ukraine and among its citizens. Then the citizens themselves will become carriers of this brand, and when they travel abroad, they will actively and respectfully promote it, and while remaining within the country, they will spread and pass it on as a legacy. A successful brand always has certain associations in different audiences. For each audience (gender, age, professional, political, socio-cultural), a dominant value should be found and parallel vectors for implementing the brand named «Ukraine» should be built. It is also necessary to work purposefully and consistently with Ukrainian journalists, especially reviewers and correspondents specializing in international topics, and to support programs

such as «Great Ukrainians». The «Ukraine» brand, like Ukrainian goods or services of an economic, political, or socio-cultural nature, must be constantly updated and improved. By choosing the right brand configuration, based on the already accumulated national experience and the latest achievements in the field of global marketing, Ukrainians can choose a strong tactic that is capable of making the world accept new and promising brands «Ukraine» and «Ukrainians» (Nagornyak, 2008). Using a tool like branding provides a significant advantage. For example, manufacturers who produce branded products differentiate themselves from competitors and achieve higher profits.

Similarly, national branding operates at the level of the state: its use creates additional competitive advantages in both the national and international spheres of the country's activities (Melnyk, 2019).

In addition, it is important to pay attention to the positive perception of Ukraine on the international arena. To achieve this, it is necessary to actively work with international partners, participants of international forums, and other international organizations. It is important to demonstrate achievements and progress in various fields, such as economy, politics, science, culture, and others. It is also crucial to actively promote Ukrainian culture, history, and traditions on the international stage, which can help increase interest in the country. The next important step in forming a positive brand for Ukraine is ensuring internal stability and political security. It is necessary to actively work on reforms and ensure human rights, fight corruption, and improve the standard of living for citizens. Such steps can help further strengthen trust in the government and authorities, which in turn can have a positive impact on the perception of Ukraine on the international stage. Ukraine has great potential for developing its brand and positive perception on the international stage. However, despite the difficult conditions and challenges facing our country, it is necessary to actively work on developing various sectors of the economy and society. For example, an important step could be the signing of an Association Agreement with the EU, which can contribute to the development of the economy and a positive perception of Ukraine on the international stage.

Summing up, it should be noted that in the context of the intensification of global competition and the fight against modern challenges, national branding is an effective tool for improving the country's image, investment and tourism attractiveness, and thereby increasing the country's competitiveness. Under current conditions,

national branding of Ukraine through the image of its regions looks relevant. This approach can become a measure of consolidation of the political nation of Ukrainians, promote the development of civil society in which political speculations on language and regional differences will lose their significance, and ultimately create a new positive country brand. Therefore, it can be concluded that the formation of a positive brand of Ukraine is an important aspect of integration into the EU. To achieve this, it is necessary to actively work on the development of various sectors of the economy and society, to combat complex challenges of foreign policy, to ensure openness and transparency in relations with international partners, and to actively promote a positive image of Ukraine at the international level. Such an approach will help attract investments and increase the country's economic stability, improve the standard of living of the population, and strengthen its position in the global arena.

5.2. The key role of future marketing professionals in environmental safety ensuring at the European region

Today, Ukrainian society is in acute need of innovations, including the educational environment. The search for the newest ways to the modernization of the training of future marketing professionals at technical universities, taking into account the formation and development of a digital & information society, determines the importance of substantiating the concept and methodology of managing the country's environmental security.

The European development course of our country as a full member of the European Community is determined by the Association Agreement between the European Union and Ukraine, the EU-Ukraine Association Agenda, the Action Plan on Implementation of the Association Agreement for 2014–2017, the Strategy for the Development of Higher Education in Ukraine for 2022–2023, approved by the order of the Cabinet of Ministers of Ukraine (Ukrainian Government) No. 286-p of 23 February 2022 and other documents.

At the end of the 20th century – at the beginning of the 21st century, authorities and ordinary citizens started to pay significant attention to environmental problems. It becomes obvious that cardinal changes in the social priorities and new value orientations of humanity are needed in terms of the 'greening' further human development, strengthening the

relationship in the ‘nature-human-society’ system, as well as the realization of the concepts of sustainable development of society and biosphere & a careful attitude to natural resources. In particular, the United Nations emphasizes that overcoming environmental crises and achieving sustainable development depends not only on the actions of the government of a certain country but also on the responsible attitude of each member of society towards nature and the environment.

In this regard, in 2019, the Verkhovna Rada of Ukraine approved the ‘Basic principles (strategy) of the state environmental policy of Ukraine for the period until 2030’, which defines the main goals of the modern state environmental policy, namely: achieving the proper state of the environment due to the implementation of the ecosystem and ecocentric approaches to the socio-economic development of the country in order to ensure the right of citizens for a clean and safe environment, balanced and smart nature management, preservation and restoration of natural ecosystems. Therefore, the training of marketing professionals in the higher education system, who are aware of environmental problems. They will be able to work within the frameworks of international environmental standards at enterprises and will contribute not only to the development of the environmental management system but also to the implementation of international eco-initiatives in Ukraine, the integration of the country into the unified European scientific & technical space (Verkhovna Rada of Ukraine, 2019).

Statement of the problem and analysis of literary sources. Comprehensive professional training is one of the most important factors for any specialist, and marketing is not an exception in this regard. Moreover, poor marketing is one of the main reasons for business failures, especially in the case of innovative businesses, and hiring a good marketing specialist is the key to success. Thus, high-quality professional training is necessary for the graduate’s potential career growth, effective work to achieve goals, and professional self-development throughout the entire life (Continuous Professional Development).

The relevance of marketing professionals training in higher education institutions grows every year because the market on all levels is becoming increasingly competitive and multifaceted. This issue is particularly acute in connection with the global environmental crisis spreading across the planet and the reorientation of people's consciousness to ensure sustainable development, circular economy principles, and other ‘green’ trends.

Professional training in universities is mainly determined by those tasks that are set in accordance with the demands of the modern information society, while their successful solution depends on many factors, both internal and external. It is worth noting that only a versatile and highly qualified specialist is able to take into account as many factors as possible and make an informed decision based on them. According to the National Strategy for the Development of Education in Ukraine for 2012-2021, professional training in universities should be aimed at improving the quality of education, ensuring its competitiveness on the basis of the concept of society and the biosphere sustainable development, active implementation of the basics of the 'green' economy and the formation of environmental awareness of every citizen in the country (Fig. 5.3).

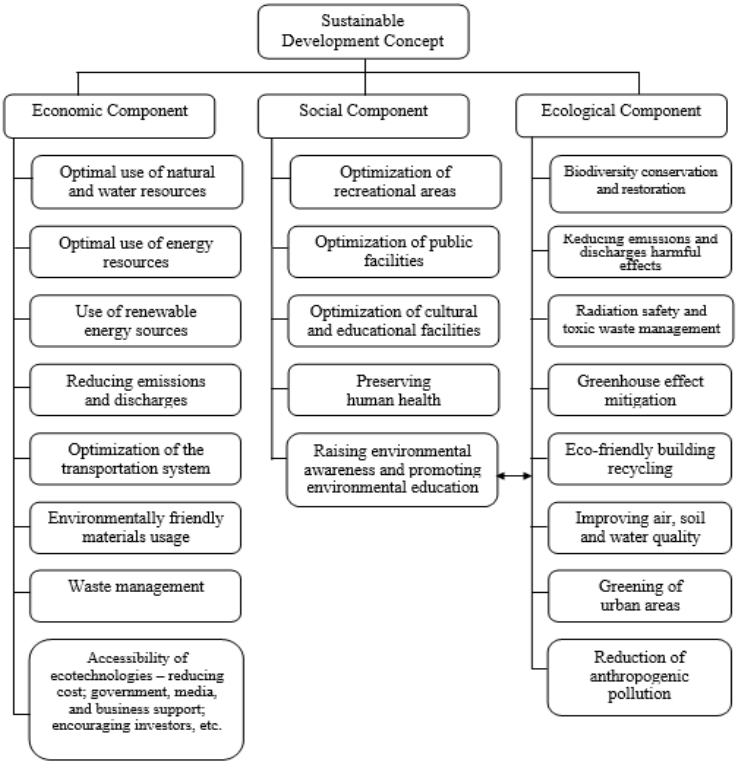

Figure 5.3 – Sustainable development for businesses and society (created by authors using data from (Bina, 2013))

So, this approach, in our opinion, will provide future professionals with the functions and tools of a creative transformer and an active & equal participant in the educational process.

Therefore, the reform of national education in the direction of convergence with European educational systems and standards necessitates the training of environmentally aware and responsible marketing professionals who are able to ensure the development of the circular economy, the conservation of natural resources, and their effective use, and the introduction of technological innovations in today's complex and changing conditions, as well as directing them to the manufacturing of environmentally friendly, smart products and services.

In the national scientific literature, the problems of creating and implementing innovations, innovative teaching methods in higher education, and integrating the national education system into a unified European scientific and educational space are actively discussed. At the same time, the conditions of their effective and fruitful functioning are analyzed, and the latest teaching methods and pedagogical techniques are developed. In this context, it is worth noting the works of such scientists as V. Yu. Bykov (2002), I. M. Dychkivska (2004), O. I. Lokshyna (2007), and others.

“Standards and Guidelines for Quality Assurance in the European Higher Education” were adopted by the higher education and science ministers in 2005, and today these documents are actively developing and adapting to the requirements of the current situation. The main purpose of the specified “Standards and Guidelines for Quality Assurance in the European Higher Education” is to ensure the quality of studying and teaching in all partner countries, to harmonize the higher education quality assurance systems in different countries and universities. The subject of these ‘Standards and Guidelines’ is to ensure the development of an educational environment, both traditional and digital, the expansion of relevant connections, and the combination of studying with research and innovations.

So, in order to become a part of the European Community, Ukraine needs to realize many reforms, including in the field of higher education. The entering of Ukraine into the unified European educational and scientific space requires a combination of the educational standards of European countries with saving the achievements and features of the national education system.

These complex tasks are actively carried out by all higher education institutions in accordance with the Association Agreement between the European Union and Ukraine, as well as in accordance with the new Law of Ukraine ‘On Higher Education’. The issues of implementation of European principles in higher technical and economic education are discussed in the papers of. (Pekhota, 2000; Zhuravsky & Zgurovsky, 2003) and others.

Leading researchers in the field of education, science, and economics also develop models of promising, successful professionals who would be able to meet the requirements of employers and modern trends in the particular industry development (Kuzmina & Strutynska, 2010; Miloradova & Shevchenko, 2020), etc. At the same time, the factors and mechanisms of the formation of the self-efficiency of a specialist from the principles of the competence approach are the subjects of special attention of researchers (Yevtukh, Luzik, & Dybkova, 2010; Muzyka, 2018; Vyshkivska, Golikova, & Myroshnychenko, 2023; etc.). The problems of professional development and growth of a specialist and future career building are presented in the works of I. Bekh (2003), N. M. Kuzmina & O. V. Strutynska (2010), etc.

The aim of the study is the theoretical substantiation of the problem of professional training of future marketing professionals at technical universities and the analysis of their role in environmental safety in the context of Ukraine's integration into the European Community.

Results and Discussion. Global transformations occurring in society expand world borders and cause economic, social & informational interaction, as well as the dependence of states with different development levels, which, in turn, contribute to the formation of general trends not only in the field of socio-economic development of the countries but also in the field of higher education.

So, the content of the modern training curriculum for marketing students in technical universities is multi-component and multi-vector. It covers not only knowledge but also methods of practical activity, creative experience, and value orientations of the future specialist's personality. In modern society informatization and digitalization, the value of knowledge is fundamentally changing.

On the one hand, knowledge becomes more accessible, and education systems more open, but, on the other hand, acquiring new knowledge and skills is becoming harder because new technologies are being developed. Each of these technologies can fundamentally change the

labor market landscape, as it already has been with the generative artificial intelligence tools. So, the formation of competencies necessary for life and work is a continuous process and it becomes possible only in the framework of the lifelong learning concept.

Keeping the direction of higher education towards fundamentality, the national system of higher education is also actively reorienting to the formation of students' wishes, ability, and motivation to independently search for knowledge from various sources of information, to apply the acquired knowledge and skills in practice, and to enrich it with critical thinking.

Another component of ensuring the quality of the national system for marketing professionals' training is the highly developed technical & technological support of the educational process, and the implementation of open education, including distance learning. This greatly expands the national educational and scientific scope, provokes healthy competition, and promotes success for the future career of the students.

It is known that today in Ukraine the professional training of future marketing specialists takes place in extremely difficult socio-economic conditions, under martial law. Therefore, the educational process quality more than ever depends on the university lecturers' competence, dedication, and willingness to teach regardless of the circumstances.

In other words, the formation of students' environmental outlook and the desire to work on the principles of environmentalism and sustainable development significantly depends on whether lecturers are able to ensure maximum awareness of students about the problems of conservation of the environment and natural resources on the planet, as well as provide them with strong and well-structured knowledge in the field of 'green' marketing and environmental management.

Particular attention should be paid to the meaning of the environmentalism concept. In the context of this study, it is considered a social movement that advocates for the protection and conservation of the natural world and its ecosystems. Its main principles are based on the idea that the natural environment has significant value and should be protected for the benefit of all living organisms including human beings in this and the next generations. Overall, the principles of environmentalism are centered around the idea of sustainability and the responsible use & management of natural resources.

It should be noted that the focus of higher education on innovations and environmental protection becomes more and more dominant trend

around the world. According to P. F. Drucker, '...business has only two main functions: marketing and innovation. Marketing and innovation create results, everything else is costs' (Drucker, 1963). And in this context, the study and appropriate adaptation of the best practices of the EU countries' educational systems, both in the legal & regulatory spheres, as well as in the spheres of organizational, managerial, and methodological experience, will have a positive effect on the post-war recovery of the Ukrainian economy in terms of its decarbonization, 'greening', and urban resilience ensuring.

The concept of a 'green' (or circular) economy is aimed at maintaining a harmonious and balanced relationship between the economic, ecological, and social spheres of society's development. In the time of the intensive dissemination of the global ecological crisis, attention to the quality of the natural environment, the need to ensure balanced & sustainable development of the society, securing people's health, etc. has significantly increased. Therefore, today there is a necessity for a reformation of economic relations, the implementation of 'green' technologies, and the promotion of environmentally friendly goods and services on the market – goods which production would not require fossil fuels usage.

It is well known that one of the most important aspects of marketing activities and the implementation of the company's marketing strategy and tactics is the collection, analysis, comprehensive study, and systematization of marketing information about customers, their needs, and the peculiarities of the goods and services market operation. At the same time, feedback from customers is also very important in terms of understanding how innovative marketing measures actively influence the customers' opinions, form their preferences and finally change behavior on the market.

So, correctly planned and thoughtfully organized marketing research in combination with appropriately chosen and formed 'green' marketing strategy are those drivers that most of all contribute to people's consciousness transformation, focusing their attention on the need to save the environment, natural resources, and adhere to healthy diet & lifestyle.

At the same time, companies implementing 'green' strategies on the basis of the identified effective marketing solutions, achieve sustainable business growth, which enables companies to obtain maximum profit and improve their reputation in the market of goods and services.

So, according to J. K. Galbraith, consumers may not yet imagine that their actions correspond to their own thoughts about the satisfaction of their

own requests (Sandage, Fryburger, & Rotzoll, 1989). Therefore, based on this, the main tasks of marketing professionals at enterprises include a comprehensive study of consumer behavior, justification of the necessity of improving products & services, and creation of innovative products (improved or fundamentally new) so that they harmonize as much as possible with the needs and requests of modern consumers.

Hence, the analysis of the world experience of economic development and its driving factors, showed that innovations take the first place among all the factors. The role of innovations is steadily growing, and the countries that relied on innovations, are marked by a much higher level of socio-economic development and, accordingly, by higher standards of their citizens' life quality.

Thus, modern, innovative marketing involves the creation of new and/or improved products, the latest services, etc. in combination with the use of the latest marketing tools, the latest forms & methods of marketing in order to satisfy the needs of consumers and producers.

So, innovative marketing is a creative combination of innovative production with the use of innovations in marketing activities in order to develop and distribute the most competitive products or services (Fig. 2). Moreover, according to P. F. Drucker, the basis of entrepreneurship development is marketing & innovations, and the most promising innovations are those based on knowledge (Drucker, 1963; Illiashenko, 2007; Illiashenko, Shypulina, & Illiashenko, 2015).

In turn, Fig. 5.5 shows the crucial influence of technological innovations on all other types of innovations, since they connect all of the innovations together. We agree with the opinion of S. M. Illiashenko and N. S. Illiashenko that currently the role of technological innovations is becoming more prominent, since any new technology requires the transformation of all components of the introduction process, as well as the spreading of innovations in the enterprise, significantly changing the strategy of enterprise management (Illiashenko, 2007; Illiashenko, 2010; Illiashenko, 2015).

So, the concept of ecological & "green" marketing is one of the most advanced business concepts today. The purpose of "green" marketing is to satisfy the needs of individuals and society through environmentally-friendly means across all stages of a product or service lifecycle, ultimately resulting in a safe and sustainable environment.

"Green" marketing has its unique features, due to the very specific nature of environmentally friendly products and services.

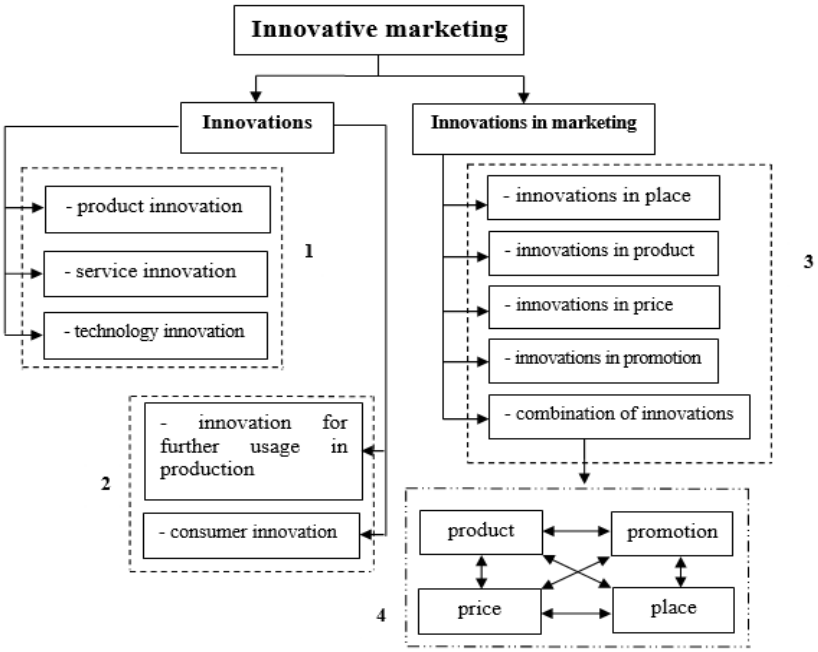

Figure 5.4 – The structure of innovative marketing (Illiashenko, 2007; Illiashenko, Shypulina, & Illiashenko, 2015).

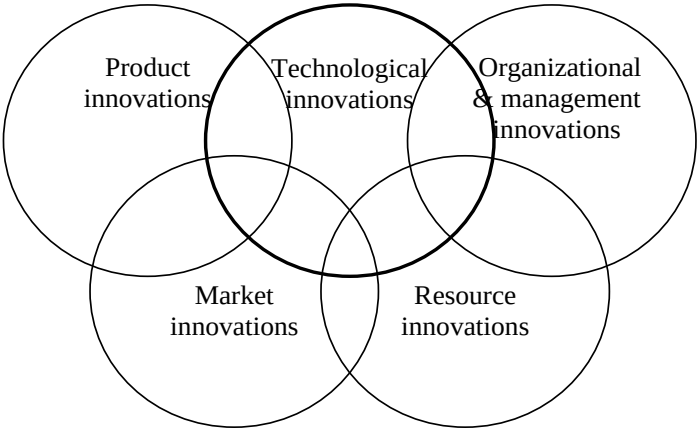

Figure 5.5 – Interrelation of types of innovations by subject (Illiashenko, 2007; Illiashenko, 2015)

Therefore, in the process of identifying the structure of the target audience and the consumer behavior specifics, the marketing professional must analyze the psychological, economic, and social 'portraits' of potential customers, determine whether they are focused on ensuring environmental protection or not, their desire to maintain the appropriate quality of the environment from the standpoint of the concept of sustainable development of society and the biosphere. And this, in turn, enables professionals to:

– develop effective price and product policies;

– effective use of appropriate nature-centered advertising with benefits directing it to the most responsible segments of the population;

– minimize the risks of uncertainty;

– avoid the risks of not selling products and services;

– study the behavior of potential consumers and their attitude to the ecological image of the company or to a certain brand;

− investigate specific factors affecting consumers of eco-goods and services, their behavior patterns, etc.;

− determine consumer motivation and build their typology by studying the lifestyle and consumer behavior of the dominant group of motivated customers. The availability of such information will enable conducting well-thought-out market segmentation and identifying the most profitable target markets and untapped niches for environmentally-friendly goods and services.

According to the A. H. Maslow's hierarchy of needs, all human needs are divided into five main groups among which the primary (basic) ones are physiological and safety needs. After satisfying these basic needs, a person feels higher level needs, including environmental ones, among which the most important are a safe living environment, safe consumer products, high-quality medical care, etc. Thus, ecological needs come to the fore, absorbing and complementing the features of all other human needs. It can also be said that environmental needs are connected with all other needs groups, as shown in Figure 5.6.

According to S. M. Illiashenko's and N. S. Illiashenko's opinion, the evolution of the ecological needs of humanity is occurring in the direction starting from "the production and use of environment protection instruments to mitigate environment destruction (pollution)", then – to the "ecological improvement of production technologies without significant changes in the structure of the manufactured products" and finally to "the production and consumption of products and services that reduce the

material and energy consumption of systems" (Illiashenko, 2010; Illiashenko, 2015).

Figure 5.6 – Modified A. H. Maslow's hierarchy of human needs transformed and supplemented by ecological needs (created by authors using data from (Kasztelan, 2017; Nekmahmud & Fekete-Farkas, 2020; Shabbir, Bait Ali Sulaiman, Hasan Al-Kumaim, Mahmood, & Abbas, 2020; Zhimin, Yanchun, Wen, Jianhua, & Ming, 2021))

So, the current state of socioeconomic and ecological development of society is characterized by significant growth of environmental needs of the first and second groups, the development of the third one, and the beginning of the formation of the fourth group of needs. In particular, the majority of national consumers are concerned about the environmental problems of the country due to the significant deterioration of the environment. Therefore, they are ready to bear additional costs and buy ecological goods in order to prevent environmental degradation, which confirms the relevance of production, as well as the presence of demand for ecological products.

The concept of the “green” (circular) economy is closely related to the problem of climate change on the planet, and therefore, its purpose is to reduce the carbon footprint by reduction of carbon dioxide and other greenhouse gases emissions, reorienting the economy to the use of alternative energy sources, etc. All this requires a fundamental change of priorities in the strategic development of enterprises, as well as their reorientation towards environmentally friendly technologies, processes, and products. And management & marketing are the spheres responsible for these difficult but essential tasks.

This is due to the fact that a person’s awareness of the necessity to live in an eco-friendly environment and domination of the concept of balanced & sustainable development is accompanied by the improvement of managerial approaches to production management and rational use of natural resources. Our society understands that in order to prevent catastrophic climate changes on the planet, it is necessary to apply a set of measures to decarbonize the economy, especially in the fields of energy, mining, and transport. And one of the effective ways of solving this problem is the transformation of enterprises on the principles of circularity of production, consumption of ‘green’ types of energy, etc. In these conditions, such fundamental paradigm change not only leads to the innovativeness of marketing approaches but also contributes to improving the ecological image of companies on the market.

The choice of the type of marketing strategy of any enterprise is always based on the achievement of the company’s marketing goals and the study of demand for a certain type of product or service. It is a marketing strategy that determines the next steps aimed at achieving the maximum profit from the implementation of ‘green’ innovations. And this, in turn, means that marketing professionals, focused on ensuring the balanced & sustainable development of both individual enterprises and the country as a whole, should contribute not only to the development of economic changes at the level of the macroeconomic system (Layton, 2011) but also to the frugal use of natural resources, promoting the decarbonization of industry and preventing climate change on the planet.

It is worth noting that when forming ‘green’ marketing strategies, it is necessary to consider the dynamism and mobility of the market, which requires monitoring of the market, and adjustment of the product range. In particular, considering the nature and level of influence of environmental factors (both internal and external ones), the authors of the work (Perebyinis & Braslavets, 2016) propose to use matrices of sales strategies,

which, based on the results of the SWOT analysis, focus on the key and most promising strategic directions of the enterprise.

According to the authors, the formation of the sales strategies matrix is recommended under the influence of strengths and opportunities (SO-strategies); strengths and threats (ST-strategies); weaknesses and opportunities (WO-strategies), as well as weaknesses and threats (WT-strategies), provides certain flexibility to the strategic decision-making system and information necessary for strategic planning. Therefore, the role of 'green' marketing as a strategic tool for adapting the activities of enterprises to the challenges of introducing a circular economy in volatile & complex economic conditions is growing significantly, while an adaptive marketing approach to managing the company's activities involves the formation and justification of correct management decisions, adequate to external conditions and influencing factors. Directions for the development of the environmental goods market in Ukraine and worldwide, according to the ideas of S. M. Illiashenko, are shown in Fig. 5.7 and Fig. 5.8.

So, taking into account public needs, 'green' marketing is one of the types of socio & ethical marketing. This type of marketing is manifested, for example, in the creation of environmentally friendly packaging, the use of resource-saving technologies, the promotion of environmentally friendly products on the market, etc. The effectiveness and success of the introduction of 'green' marketing at enterprises and companies are substantiated by the example of many years of practice of well-known companies that are the leaders in their markets. These are, in particular, such companies as GlobalLogic, IKEA, Patagonia, Starbucks, Timberland, and Unilever, as well as such national brands as Morshynska, Bosch Ukraine, L'Oréal Ukraine, YASNO, DTEK, and others. And this topic continues to be actively studied by scientists and discussed in the scientific literature (Bina, 2013; Kasztelan, 2017; Nekmahmud & Fekete-Farkas, 2020; Shabbir et al., 2020; Zhimin et al., 2021), especially in the context of the urgent necessity to improve the content of future marketing professionals' training taking into account the latest trends in the world and national markets.

As mentioned, in the modern conditions of reforming the national system of higher technical education in terms of European integration, the problem of training professionals in higher education institutions is particularly acute. This applies to the professional training of future marketing specialists, especially in the context of fundamental reforms in

the educational paradigm from traditional to person-oriented, aimed at forming the necessary key life, professional, and research competencies.

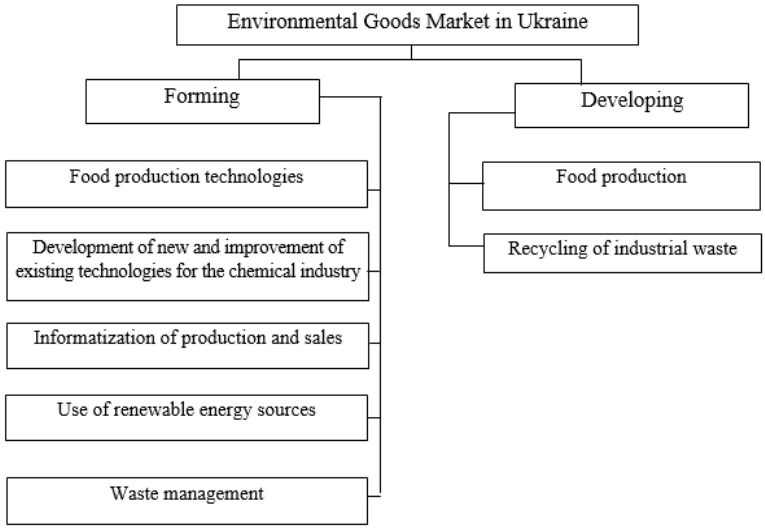

Figure 5.7 – Directions for developing the environmental goods market in Ukraine (Illiashenko, 2010; Illiashenko, Illiashenko, 2016)

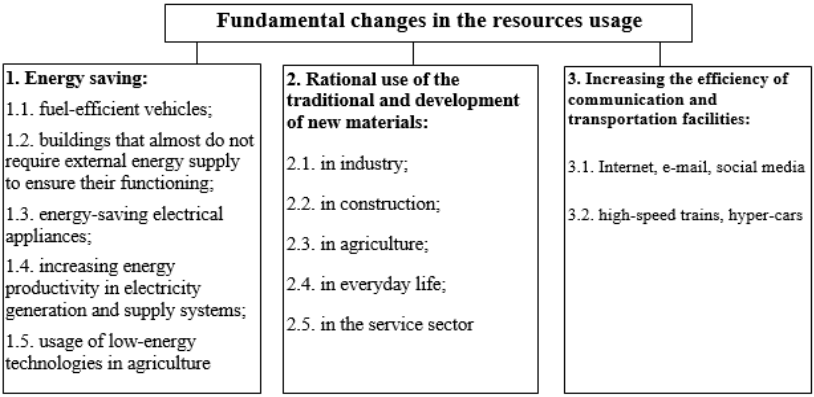

Figure 5.8 – Directions for the development of the global environmental goods market (Illiashenko, 2010; Illiashenko, Illiashenko, 2016).

The issue of formation of environmental competencies among higher education graduates of the ‘Industrial Marketing’ educational program

remains important, firstly, by mastering the disciplines related to environmental management and 'green' marketing, and, secondly, by forming professionally important qualities on the basis of sustainable development, implementation of the basics of the circular economy and other substantiated modern eco-trends.

The system of professional training of marketing students is a complex of important structural elements that are closely related and interact with each other, forming a complete unity. Professional training of marketing professionals is carried out on the basis of modern scientific-methodical approaches and educational techniques and is an organic part of the system of economic education in a higher technical education institution. It aims to produce highly qualified specialists who possess modern management and marketing techniques and are capable of promoting eco-friendly goods and services effectively in both the short and long-term, resulting in high sales levels (Fig. 5.9).

Marketing has extended beyond advertising and sales. It became a part of the enterprise management system. The same approach to marketing management should be implemented for the analysis, planning, and realization of programs aimed at social issues solving, including the modern circular economy tools usage. It is not enough for enterprises to produce quality products; competition pushes businesses to look for particular ways for obtaining competitive advantages and creating a positive image & a strong company reputation.

Today, as mentioned before, customers increasingly pay attention to the fact that the products and services they consume should not have a significant negative impact on the environment. Therefore, due to the desire to be smart & environmentally friendly, companies improve technological lines, introduce innovations, use alternative energy sources, recycle waste and process water, choose suppliers that guarantee environmental safety, implement environmental management systems at their own enterprises, etc.

An example of implementing the 'Green Office' principles in the company is demonstrated in the work by the author (Shpak, 2012). Through an analysis of relevant literature sources (Back, 2009; Masliukivska, 2009; Petrashko, 2010), the author identified the necessity for implementing appropriate methodological tools. It can be introduced according to the following algorithm:

– forming a team of interested employees and introducing an environmental component into the company's strategic orientations;

– formulation of the general goals and main tasks of the ‘Green Office’ initiative;

– the creation of an organizational structure, i.e. coordination of resource and energy flows with units responsible for the planned changes;

– conducting an environmental audit of the company;

– planning and establishing the priority of measures and how they will be implemented, stating project implementation deadlines;

– obtaining consent from interested parties, planning financial or other profits for employees involved in the project;

– conducting training, seminars, conferences, round tables, informational and explanatory work not only among employees but also among clients, partners, etc.;

– monitoring the performance of tasks and the results of their execution; informing employees about the company’s further plans and about team achievements;

– implementation of an environmental management system with the further certification according to the ISO or EMAS requirements;

– sharing information among stakeholders – owners, customers, suppliers, creditors, etc., and if it is necessary – searching for additional investments.

Figure 5.9 – The contribution of the green economy, professional training of future marketing specialists, and environmental marketing to ensuring the environmental safety of society and sustainable development.

As a rule, efforts of the ‘green’ team in terms of the introduction of marketing environmental initiatives and projects bring considerable

dividends, both in the form of intangible competitive advantages, for example, in the increase of the so-called reputational capital, and in the form of financial advantages, reduction of the production energy consumption, costs of raw materials, etc. So, none of the companies today can refuse to solve numerous environmental problems, in particular, such as climate change on the planet, deterioration of the quality of almost all biosphere components, reduction of soil fertility and its desertification, reduction of valuable natural resources availability, and so on.

So, the philosophy of the 'Green Office' is not only a socially responsible attitude to nature and the environment but it is also an effective mechanism for saving money in the long term perspective, increasing the authority and reputation of the company (Daniel & Winston, 2006). After all, environmental degradation affects the well-being and quality of life of every person.

Thus, marketing education emerges from the business practice of using marketing as a social tool for those changes that are suitable for achieving set goals by developing comprehensive programs that meet the individual needs to improve socio-economic conditions, ensure the appropriate level of human health, sustainable development of society and the biosphere, a thrifty attitude to nature and its resources, etc. (Afanasieva & Nesterenko, 2016).

Over the last few years, the concept of the 'green' (circular) economy, which should ensure the balanced and sustainable development of humanity, both in the ecological and economic context, becomes increasingly popular. It is directly related to 'green' marketing and environmental management, and that is why marketing and management tools play a significant role in ensuring the sustainable development of the biosphere and society.

Education as a process cannot stop throughout the whole person's life. It not only shapes a person's worldview and intelligence but also provides the ability and even the will for creativity, and the desire for comprehensive self-improvement. According to experts' opinion, the individual results of education are the comprehensive awareness of the individual, the formation of a person's experience, traits, knowledge and skills, competencies, etc. All this enables future specialists to live creatively, find their own place in life, successfully build a career, and work effectively in volatile, uncertain, and dynamic conditions.

Therefore, the processes of modernization and reformation of higher economic education, which actively take place in leading universities, are

objectively aimed at its further development, ensuring the requirements of society, and the whole European community in highly qualified competitive marketing professionals, responsible for the environment state, conservation of natural resources and minimization of production and household waste.

Environmentally oriented ‘green’ marketing is aimed to satisfy the ecological needs of humanity, as well as the formation of sustainable development strategies and increase the competitiveness of enterprises, including energy, mining, and transport ones. That is, the goal of marketing is not to promote the highest possible level of consumption of goods and services but to achieve maximum consumer satisfaction. This is the idea of the eco-friendly and smart attitude towards all components of the environment that is a key and defining feature of ‘green’ marketing.

Therefore, in the conditions of a market economy, marketing becomes the tool that is aimed to contribute to the satisfaction of consumer requirements, and, as a result, to increase the quality of people’s lives. The concept of ‘green’ marketing as an effective tool for ensuring the sustainability of the development of economic systems becomes more and more widespread. Inefficient organization of marketing activities and inability to take into account ‘green’ trends in business lead to a decrease in demand for products and, as a result, to the loss of a favorable competitive position in the market. On the other hand, well-conducted marketing analysis and marketing research at the enterprises and development of the correct marketing strategy will be an important step towards the successful introduction of ‘green’ products and services and recognition on the national, European, and world markets.

5.3. Opportunities for applying neuromarketing research and artificial intelligence tools to promote a healthy lifestyle in Ukraine

In the European Union (EU), there are extensive practices to support the health and well-being of citizens. This includes measures to prevent disease, support a healthy lifestyle, and provide education programmes on healthy eating and physical activity (World Health Organization, 2011). A healthy European approach to life is not only about physical health, but also about mental well-being and social adjustment.

Promoting a healthy lifestyle is an important aspect of Ukraine's integration with the EU, as it creates a more favourable environment for the economic, social and political development of the country.

Promoting a healthy lifestyle can reduce morbidity and mortality, which is good for the economic development of the country. Healthy people work more productively and can contribute more to the economy. In addition, reducing expenditure on disease treatment can free up budgetary resources for other important areas, such as podiatry and infrastructure.

Promoting a healthy approach to life can include activities such as organising special events such as healthy festivals, organising sports competitions, and disseminating information about a healthy approach to life through social media and other channels. In addition, it is also important to focus on education in schools and informing the public about the benefits of a healthy approach to life through health facilities.

The ultimate result of promoting any message, including a healthy approach to life, depends on how well we understand our target audience and how effectively we can reach them. In order to achieve the best results in promoting a healthy approach to life, we need to use modern marketing tools to help create effective promotion strategies. These include the results of neuromarketing research and artificial intelligence tools.

The influence and effectiveness of neuromarketing and artificial intelligence in promoting a healthy approach to life and a healthy lifestyle have already been stated in articles by J. Harris (Harris et al., 2018), H. Akbarialiabad (Akbarialiabad et al., 2021), M. Demir (Demir, 2022), G. Orzan (Orzan et al., 2012), A. Stasi (Stasi et al., 2018), A. Nemchenko (Nemchenko et al., 2020), A. Fadhil (Fadhil & Gabrielli, 2017), A. Aggarwal (Aggarwal et al., 2023), C. Tsai (Tsai et al., 2022), G. Kreps (Kresp & Neuhauser, 2013).

In this article, we will consider how the results of neuromarketing research and marketing tools with artificial intelligence can be used to promote a healthy approach to life in Ukraine.

In summary, a healthy European approach to life includes a number of components that aim to maintain physical and psychological health as well as general well-being. Promoting a healthy approach to life can include promoting principles such as eating a healthy diet with an adequate intake of healthy foods and limiting consumption of sugar, fatty, processed foods; physical activity; stress management, including the use of relaxation techniques such as meditation, yoga, deep breathing and avoidance of factors that can cause stress, such as lack of sleep and overwork; adequate

quality and duration of sleep; social support: this includes having friends, family and community who can help in times of need, as well as ensuring participation in social life; taking care of one's health with regular medical check-ups, preventive and curative procedures, as well as following doctors' recommendations and taking necessary measures to prevent illness.

However, in Ukraine, promoting a healthy approach to life can face a number of challenges. Consider some of them.

Low level of awareness and education.

The Ukrainian population tends to believe that they take good care of their own health. According to research (Барська та інші, 2018) Only one in ten respondents said they take care of their own health rather poorly (8.0%) or not at all (2.8%). At the same time, many respondents demonstrated a lack of awareness of health issues; 21.1% of parents had ever refused to have their child vaccinated; 5.1% of parents had been discouraged from vaccinations by healthcare workers. In addition, the prevalence of smoking was 23.9% (7.7% among women and 39.6% among men); 8.6% of respondents had consumed alcohol to excess in the past year (17.5% of men and 1.7% of women); 55.6% of respondents were overweight or obese. This suggests the need for more information and educational activities to raise awareness of healthy lifestyles among Ukrainians.

Economic constraints.

Among the reasons that negatively affect their health status, 30.8% of respondents (Барська та інші, 2018) mentioned economic constraints. Indeed, according to estimates by Finance.ua, a healthy lifestyle in 2022, including a healthy diet, sports, preventive medical and psychological measures, cost Ukrainians at least UAH 9,336, with an average salary of UAH 14,847. Healthy lifestyles are more expensive, for example, due to the need to purchase special dietary food or pay for a sports club membership. This can impede access to a healthy lifestyle for people with low incomes.

Insufficient infrastructure.

In Ukraine, there is limited access to sports grounds, parks and other places that can promote physical activity. While the State Statistics Service estimates that the total number of sports facilities in Ukraine is 96,678, most of them do not meet international standards, are in disrepair, or are unevenly distributed across urban and rural areas (Імас & Андрєєва, 2022). Thus, this hinders access to sporting activity for people who cannot afford to attend paid gyms or swimming pools.

Problems with compliance with rules and laws.

A significant drawback of the Ukrainian advertising legislation is the almost complete absence of regulations on food advertising (Леськів, 2015). The mechanisms for controlling and circulating tobacco products and alcoholic beverages need to be improved (Новицька & Хлєбнікова, 2018).

Cultural and traditional prohibitions.

Also, many aspects of a healthy approach to life, such as diet and physical activity, can be associated with cultural and traditional attitudes. This can cause resistance from those who do not want to change their approach to life.

Classical marketing suggests taking into account possible difficulties during the market and target audience analysis phase. Typically, this analysis is based on survey methods, among them: focus groups, in-depth interviews or large-scale questionnaires. However, today there is a tool that provides more objective information on the reactions and behaviour of the target groups: neuromarketing.

Neuromarketing is a modern field of marketing that uses neuroscientific research methods to study an individual's response to marketing stimuli such as advertising, product packaging, prices, etc. Neuromarketing tools include electroencephalography (EEG), magnetic resonance imaging (MRI), galvanic skin reflex (GSR) and heart rate measurement (HRM).

Findings from neuromarketing research provide data on how the brain processes information about products and services, which can create more effective advertising messages and increase their impact on consumers.

Today, many companies around the world are using neuromarketing in their campaigns to promote a healthy approach to life and a healthy lifestyle.

For example, Fitbit uses neuromarketing to promote its fitness trackers and healthy living in general (Mouammine & Azdimousa, 2020). Fitbit collects data on user metrics and conducts neuroscience-based research to find out which promotional materials are most effective in promoting its products. This research helps the company create more engaging advertising campaigns that better meet the needs and desires of consumers.

Another example is Nike, which uses neuromarketing to attract customers to its fitness programmes and products (Plakhin et al., 2018).

Nike conducts research based on neuroscientific methods to determine which motivations and feelings most influence people when they exercise and use the company's products. Based on this research, Nike creates more effective promotional materials and products that more effectively influence consumers.

There has also been research in the US and UK which shows that the use of neuromarketing can help promote a healthy approach to life (Caratù et al., 2020).

The use of neuromarketing research or "neuroinsights" can help develop strategies to promote a healthy approach to life in Ukraine by providing data on consumer reactions to various stimuli, complementing other data on consumer behaviour analysis.

For example, neuromarketing can be useful in creating visual elements that grab consumers' attention. For example, the use of bright colours, "memes" and graphics can help to draw people's attention to the theme of a healthy approach to life. In addition, neuromarketing research will be useful in choosing colour palettes and designs that are associated with a healthy approach to life. For example, a traditionally green colour or images of happy and healthy people can evoke positive emotions and motivation for a healthy approach to life.

Neuromarketing can also be used to develop effective messages that can influence consumers' decisions about their health. This requires the use of slogans, symbols and acronyms that elicit a positive emotional response from the target audience and motivate them towards a healthy approach to life.

Neuromarketing research will also provide data on the target audience's response to promotional activities such as social events, useful mobile apps, and videos, which will be more accurate than data obtained from surveys.

In order to use the resulting neuromarketing research in advertising campaigns most effectively, it is also necessary to collect data and conduct behavioural and interest surveys of the target audience, which will enable more accurate targeting of advertising campaigns and increase the effectiveness of promoting a healthy approach to life. Artificial intelligence-based marketing tools can meet these challenges.

Artificial intelligence (AI) is computer systems that can perform tasks that require human-like intelligence. AI tools can analyse data on consumer behaviour on social media and other online platforms to

understand which content and formats are most appealing to certain groups of people.

Consumer behavioural data can be collected through a variety of methods, including social media analysis, surveys and statistical analysis of shopping and browsing history. This data can be used to create personalised marketing campaigns that can capture the attention of the target audience and convince them to change their approach to life.

For example, if we find that a particular group of consumers is prone to drinking large quantities of sugary drinks, we can create a personalised campaign that aims to reduce their consumption of sugary drinks. We can use data on their behaviour and provide them with personalised recommendations, such as suggesting they replace sugary drinks with healthier drinks, such as water or sugar-free tea.

Consumer behavioural data can also be used to create content that is attractive and relevant to a particular target audience. For example, if we know that a certain group of consumers prefers video content, we can create video ads or videos that will be most appealing to that group.

We can use artificial intelligence to analyse the behaviour of the target audience and provide them with content that best suits their preferences and interests. For example, health apps can use artificial intelligence to collect data about users' behaviors and habits, and use that data to create personalized healthy living plans. These plans can include personalised recommendations on diet, physical activity, sleep, etc.

In addition, artificial intelligence can be used to improve the effectiveness of marketing campaigns. For example, based on the analysis of data about the behaviour and interests of the target audience, artificial intelligence can help to create more accurate and personalised advertising messages that are more appealing to consumers and promote a healthy approach to life.

Artificial intelligence can also be used to analyse large amounts of data about people's behaviour. This allows us to identify trends and understand which factors have the greatest impact on the health of the population. This information can be used to develop personalised marketing campaigns based on consumer behavioural data and more effective strategies for promoting a healthy approach to life.

So, using neuromarketing and artificial intelligence in marketing to promote a healthy approach to life can significantly improve the effectiveness of marketing campaigns and increase interest in the healthy approach to life in general.

Here are examples of possible applications of neuromarketing research and AI tools in strategies to promote a healthy approach to life.

1. Data analysis and personalisation of recommendations.

The data and information collected through neuromarketing and consumer behaviour analysis can be used to personalise recommendations and suggestions. For example, based on the analysis of a user's online behaviour, artificial intelligence can offer them personalised recommendations for a healthy lifestyle approach that best matches their preferences and needs. This can be achieved by analysing and using a large amount of data about users' behaviour, such as dietary preferences, physical activity, sleep, as well as information about their health and genetic characteristics.

2. Creating personalised programmes for a healthy approach to life.

Artificial intelligence can also help create personalised programmes for healthy living, based on insights from neuromarketing and consumer behavioural analysis. Such programs can contain personalized recommendations on diet, physical activity, weight control, meditation and other aspects of health. In addition, artificial intelligence can help create personalised programmes for the treatment and prevention of disease based on individual health data.

3. Increasing the effectiveness of marketing campaigns.

The use of artificial intelligence and neuromarketing can help improve the effectiveness of marketing campaigns to promote a healthy approach to life. By analysing consumer data and behaviour, it is possible to better identify the target audience, their preferences and needs, and choose the most effective communication channels. In addition, personalising offers and recommendations can significantly increase the likelihood that consumers will adopt a healthy approach to life, which in turn leads to greater levels of public health and well-being.

4. Developing innovative products and services.

The use of artificial intelligence in marketing can also help in the development of innovative products and services related to a healthy approach to life. For example, artificial intelligence data analysis can be used to identify new trends in consumer behaviour, which can lead to the creation of new products and services that can meet new needs.

5. Improving engagement with target audiences.

Using artificial intelligence in marketing can also help improve the customer experience. For example, artificial intelligence-powered chatbots can be used to answer customer questions quickly and efficiently, as well

as provide personalised recommendations. This can lead to higher levels of customer satisfaction and repeat sales.

So, the use of neuromarketing and artificial intelligence can significantly improve the effectiveness of marketing campaigns aimed at promoting a healthy approach to life. They can help in personalising marketing campaigns, creating engaging multimedia content, analysing target audience behaviour, developing innovative products and services, improving the customer experience and much more.

Based on the results of the study, the following recommendations can be offered for the practical application of neuromarketing research and artificial intelligence tools to promote a healthy approach to life in Ukraine:

1. Set up experimental teams to test new and innovative approaches to promoting a healthy approach to life, based on evidence from neuromarketing research.
2. Collect real-time data on the behaviour and preferences of the target audience, using various channels and technologies such as mobile apps, smart watches and physical activity sensors.
3. Apply analytical tools such as machine learning and data analytics to process large amounts of information from a variety of sources and identify trends, connections and patterns in consumer behaviour.
4. Create personalised marketing campaigns based on consumer behaviour data, using targeted advertising and other tools to achieve the greatest effectiveness and reach of the target audience.
5. Develop engaging multimedia content that will be most effective for specific consumer groups, based on data from neuromarketing research.
6. Engage in partnerships and collaborations with academic research institutes and other stakeholders to share knowledge and expertise in neuromarketing and artificial intelligence to promote a healthy approach to life.

As a result of the research, we have found that the use of neuromarketing research and artificial intelligence tools can be very useful in promoting a healthy approach to life in Ukraine.

Neuromarketing techniques can help to identify the most effective incentives for the target audience, which will be used to develop a marketing strategy.

Artificial intelligence can greatly improve the effectiveness of marketing campaigns and content because it can process large amounts of data and make recommendations based on the analysis of consumer

behaviour. This can help reduce the time and cost of developing and implementing a promotion strategy.

With this approach, we recommend the use of neuromarketing research and artificial intelligence tools for the development and implementation of marketing campaigns that will promote a healthy lifestyle in Ukraine.

The results of this research have implications for Ukrainian public policy in the context of Ukraine's integration into the European Union. A healthy approach to life is one of the core values of the EU and an important part of its culture. Ukraine, aspiring to become part of the EU, also needs to adhere to these values and instil them in its population.

By using modern marketing research and tools, the effectiveness of marketing campaigns can be greatly increased, attracting more people to a healthier approach to life. In addition, using innovative methods to promote a healthy approach to life can help Ukraine to strengthen its position on the global stage and become more competitive in the field of public health and wellbeing.

5.4. The impact of artificial intelligence tools in the management of human resource behaviour on the outcome of decision-making by economic agents in the digital space

Today, the topic of artificial intelligence has gained considerable popularity both among scientists and in the scientific community, which demonstrates a great interest in this topic (SlovoIdilo, 2022). In recent years, the development of artificial intelligence (hereinafter referred to as AI) has been rapidly evolving due to advances in computing power and algorithms.

According to a sample survey of 7,502 enterprises worldwide conducted by Morning Consult on behalf of IBM, the global share of enterprises that have implemented artificial intelligence is currently 35%, with China and India having the highest rates of AI deployment at 58% and 57%, respectively, while Canada has 28%, the UK 26%, the US 25%, and South Korea 22%. Of the surveyed enterprises, 28% have a comprehensive AI strategy, 25% are focused on limited or specific use cases, and 37% are developing an AI strategy (Lin, Taipei, 2022).

Artificial intelligence is currently being used in a wide range of applications, including robotics, autonomous vehicles, natural language

processing, image recognition, speech recognition, facial recognition and machine learning. AI technology is used to automate tasks such as data analysis, decision-making processes, and customer service. However, we, as scientists, are faced with the task of studying the impact of these tools and identifying the results of their action.

The study (Lohvinenko, 2022) analysed the use of artificial intelligence tools in the field of human resource behaviour management and proved the improvement of personnel management efficiency through the use of artificial intelligence tools. However, this topic requires further research, namely, the study of the impact of artificial intelligence tools in the management of human resource behaviour on the outcome of decision-making by economic agents in the digital space.

The article (Kostrikin, 2009) considers the essence of the phenomenon of influence on other people as one of the goals of interpersonal communication, and proves that in the system of managerial communication, one of the reliable means of ensuring the desired effectiveness and achieving the predetermined goals of joint activities of subordinates is the culture of communication and the manager's understanding of the basic laws of the phenomenon of communication itself and its psychological characteristics.

But firstly, the psychological impact is investigated here, and secondly, whether it is possible to compare the relationship between humans and AI algorithms with humans, because on the one hand, AI algorithms are able to perform tasks similar to those performed by humans, such as pattern recognition and decision making. However, the relationship between humans and AI algorithms is different from the relationship between humans because AI algorithms are not able to think or feel emotions in the same way as humans. AI algorithms can be used to help people make decisions, but they cannot replace human judgement or intuition.

The author of (Solodukhin, 2017) notes that without taking into account behavioural aspects, existing models do not allow developing effective economic strategies, while Western economic science addresses this issue using the conceptual provisions of the theory of behavioural economics. Therefore, it can be noted that effective management requires taking into account all behavioural aspects of the object of management with subsequent behavioural adjustment.

Influence is the change that one person or group of people can have on another person, group or society as a whole. It can be a positive or

negative influence, depending on what kind of change is taking place. Influence can take many forms, such as speech, actions, thoughts, ideas, behaviour, example, resources, power, etc (Solodukhin, 1989).

The impact on an economic agent is a change in the conditions of functioning, activity and performance of an economic agent that occurs under the influence of various environmental factors, such as legislation, competition, technological and economic innovations, changes in consumer habits, and much more (Ushakova, 2012).

Since an economic agent always operates in an external environment, influence is an integral part of functioning in the modern economic world. Depending on how an economic agent reacts to the influence, it can succeed and achieve high results, or fail and fail.

In the context of managing the behaviour of human resources on the outcome of decision-making by economic agents in the digital space, it can be defined that the management process is the ability to distribute the workflow to others.

Usually, people and organisations are managed by means of information management influences. When transferring information from a manager to a subordinate, not only the content of this information matters (what needs to be done, what needs to be achieved, how the work should be done, what to pay attention to), but also the form in which this content is "packaged". It is possible to change the "packaging" of information using various methods and techniques of managerial influence, and we will consider the most famous ones below (Moskalenko, 2007).

To begin with, let's look at the existing methods of influencing economic agents, there are many methods of influence, they are divided into different categories and types, but to summarise, we can identify those that are repeated in all materials.

There are two main types of influence (Lepa, 2012):

1. Targeted and disoriented, i.e. influence on a person can be intentional and unintentional. An intentional method of influencing a person is for something and for a reason (i.e. there is a goal), while an unintentional method is for a reason only (i.e. it has only a reason, for example, charm).

2. Imperative and non-imperative - non-imperative methods of influencing a person (requests, advice, persuasion, praise, support and consolation) and imperative methods of influence (orders, demands, prohibitions and coercion. There are also disciplinary methods of

influencing a person (warnings, reprimands and punishments); threats (intimidation); self-inspiration; criticism; rumours and gossip.

Let's take a closer look at each of them:

The first and most irrational method of management is the method of punishment. This is an influence on the object of management by means of an explicit or implicit threat of punishment. In this case, the employee follows the manager's orders only to avoid punishment in one sense or another (fines, reprimands, dismissal, deterioration of relations, loss of reputation, etc.)

The second similar method is the influence of law or rules; when setting a task for the object of management, reference is made to some mandatory conditions (legislation, instructions, labour regulations, etc.) in force in the organisation, to mutual agreements, group norms, and others, and most relationships are based on this.

The third method of example is to refer to authoritative sources, the management entity's own experience or the experience of others.

The fourth method is criticism – influence through motivating criticism of an employee's actions, but not of the employee himself. Usually, there are certain rules that should be followed in order to create a certain motivation for the person to solve the task as a result of criticism. However, in many cases, criticism by the object of management has the opposite effect – demotivation.

The next fifth method is involvement, the meaning of which is that the object of management itself should take part in the development or adoption of the decision that it will have to implement. This decision should become "dear and close" to them. Needless to say, the motivation to implement their own decisions will be much higher than decisions handed down from above.

The sixth is the reward method - influence through the promise of a reward. This is what is also called incentives. The general principle is: "If you do this, you will get that". Just as with punishment, it is important to understand what is valuable to the employee, what reward will be meaningful to them. Rewards should not be reduced to banal forms - money, gifts, benefits, status. Rewards should take into account the more complex needs and motivations of the individual.

The seventh method of suggestion is psychological influence by putting the object of control into a state of complete unconsciousness. Suggestion is possible with the power of the eye or with the help of words. The ability to suggest is a natural gift; on the other hand, there are special

techniques that can be used to cause a person's consciousness to be disturbed for a while and at that time "throw" certain information into his or her subconscious mind, which encourages them to act.

And the last and most honest method is the method of persuasion - the meaning of persuasion is to make an employee realise the importance or necessity of solving a particular task or performing actions in a certain way. Special technologies can also be used in the process of persuasion.

However, all of these methods are imperfect and have many drawbacks that either have a negative impact on the object of management or are impossible to apply when managing human resource behaviour in the digital space.

However, behavioural technology provides one method of managing the behaviour of economic agents in the digital space - the method of reflexive management.

The necessity of using the method of reflexive management in the system of human resources behaviour management is studied.

The essence of reflexive management (Turlakova, 2023) involves influencing the object of management with the subsequent assessment of this impact directly on the object and the entire management process with the possibility of further studying the impact of artificial intelligence tools in managing human resource behaviour on the outcome of decision-making by economic agents.

The essence of reflective management is that the management process is based on continuous analysis and evaluation of the results of its activities, identification and correction of errors and gaps in actions, as well as the use of feedback and experience to improve further actions. In this process, the influence that ensures the transition from the previous to the next stage of management is of great importance.

According to the concept (Cherepekhina, 2019), the main reflexive characteristics of management agents that influence the decision-making process in the process of interactions in the digital space and determine the application of controlling influences by the management subject are identified, namely: intentional orientation, competence, awareness and intensity of interaction with the digital space.

Thus, the developed reflexive management method involves the impact on the object of management with the subsequent assessment of this impact directly on the object and the entire management process with the possibility of further studying the impact of artificial intelligence tools in

managing human resource behaviour on the outcome of decision-making by economic agents.

The essence of reflective management involves influencing the organisation or the object of management, which manages with the use of this knowledge in decision-making and subsequent changes in strategy.

Thus, influence is an integral part of reflective management (Yarmak, 2017), as this approach involves constant evaluation of one's own actions and interaction with the environment. Influence can be exercised through various forms of communication that allow a manager to establish interaction with his/her employees and other stakeholders and take into account their needs in the management process.

Therefore, let's consider the impact of artificial intelligence tools in managing human resource behaviour on the outcome of decision-making by economic agents in the digital space

Determination of the level of trust in artificial intelligence algorithms in the management of human resources behaviour.

As described above, the influence may not necessarily be direct, but it can be expressed in a recommendation, i.e. artificial intelligence tools generate recommendations based on which the system user can decide whether to accept or not.

Modern technologies, such as artificial intelligence systems, can collect and process a large amount of data about a user, their behaviour and interests, which allows them to generate personalised recommendations for the user.

These recommendations can be used by the user to make decisions in various areas of life, including economic activity. It is important to remember that recommendations, despite the fact that they are based on processing a large amount of data and applying artificial intelligence algorithms, are not infallible.

They may not be accurate or complete, so the user should always evaluate the recommendations and make their own risk and opportunity assessment before making a decision.

The level of confidence in recommendations generated by AI systems depends on several factors, such as the quality of the data, the algorithms and methods used to analyse the data, and the amount and quality of model training.

Therefore, let's consider the main factors that can characterise the level of trust in artificial intelligence recommendations (Lohvinenko, 2022):

1. Transparency and explainability: The more transparent and understandable the algorithm used to generate recommendations, the higher the level of trust users may have. Users should be able to understand what factors are taken into account in the system and how they influence the recommendations.

2. Interpretability: The easier it is for a user to interpret and understand the recommendations, the higher the level of trust they may have in the system.

3. Quality of user interaction: The more efficiently and effectively the system interacts with the user, the higher the level of trust they can have in the recommendations.

4. Product reputation and reliability: The reputation and reliability of a system can affect the level of trust users have. If the system has a good reputation and has proven to be a reliable tool, users may be more inclined to trust its recommendations.

So, as you can see, the level of trust is formed by a large number of factors that can generally influence the user's final decision (Shumilo, 2022).

The level of trust in AI recommendations is directly proportional to the decisions that users make based on these recommendations.

If the user does not trust the recommendations, they may not follow them or find other sources of information to make a decision. On the other hand, if the user trusts the recommendations, they can make decisions more easily and quickly, which can be important in a fast-moving market.

Transparency and explainability of algorithms can be important for users, as it helps them understand what factors are taken into account in the system and how they influence the recommendations (Miller, 2018). If a user can easily understand how the system works, they can trust its recommendations and make decisions based on them.

The quality of the user experience can be important for those users who do not have sufficient knowledge of how the system works. If the system can help users understand the recommendations and explain their meaning, it can help to increase the level of trust in the system and the recommendations it generates based on the data it collects.

The introduction of artificial intelligence tools into the decision-making process of management entities in the digital space can have both positive and negative consequences. On the one hand, AI-based decision-making can help organisations make more informed and accurate decisions, leading to increased efficiency and cost savings.

This can be particularly useful for businesses operating in highly competitive markets where small advantages can make a big difference. On the other hand, AI decision-making can also lead to an increased risk of bias, as algorithms can be programmed with certain biases or preferences that can influence decision outcomes.

The analysed methods of influence have many disadvantages that can negatively affect the entire management process; in the course of the study, the method of reflective management has shown its effectiveness, since it involves influencing the object of management with further assessment of this influence directly on the object and the entire management process with the possibility of further studying the impact of artificial intelligence tools in managing human resource behaviour on the outcome of decision-making by economic agents.

It should be noted that the impact of artificial intelligence tools in managing human behaviour should take into account all behavioural aspects of the object of management with subsequent behavioural adjustment – which characterises this method of management as a method of reflexive management.

The paper develops a system of recommendations for building effective algorithms for the impact of artificial intelligence tools in managing human resource behaviour on the outcome of decision-making by economic agents in the digital space.

5.5. Ukrainian electronic commerce: current trends and development prospects in the conditions of Ukraine's integration into the EU digital single market

The digital economy is based on the use of innovations, technologies, big data, and integration processes. The digital economy potential can be fully realized if business, civil society, governments are involved in the processes of digitization and creating common digital markets (Zadoia et al., 2020). E-commerce receives strong competitive advantages in the conditions of digitalization of economies and integration of the particular countries' markets, as well as opening of access to common markets to new participating countries.

The signing of the Association Agreement and Ukraine's recent accession to the EU candidate status require specific measures to accelerate the integration of the digital market into the EU Digital Single Market

(Taptunova et al., 2021). The EU Digital Single Market Strategy was implemented by the European Commission in 2015 and aimed at achieving synergy between EU countries in the field of the latest technologies, cross-border trade and provision of services within the Digital Single Market (DSM). The strategy aims to ensure full advantage of the new digital era for European economy, industry and society. The EU is actively building a free and secure DSM where people can communicate securely, shop online without borders and businesses can sell their goods/services through e-commerce tools across the EU (Cabral et al., 2021).

The accession of Ukraine to the Single Digital Market of the EU in the post-war period will open up new opportunities for the development of Ukrainian e-commerce. Therefore, the study of the trends of the e-commerce market in Ukraine and the search for ways of its development in the conditions of the European vector of economic development are relevant tasks.

The OECD defines e-commerce as the international sale or purchase of goods or services carried out over computer networks by methods specifically designed to receive or place orders. E-commerce combines the possibilities of electronic communication tools with the world trade (OECD, 1999).

The development of e-commerce companies depends on the growth of the number of Internet users and their activity, because they are the potential target market for the sale of goods and services. The drivers of e-commerce growth are rapid Internet penetration, increased use of digital devices, growing consumer purchasing power and confidence in online shopping, and the emergence of new marketplaces and e-commerce platforms.

In 2021, retail e-commerce sales worldwide amounted to 5.211 trillion USD. It is predicted that in the coming years this indicator will show a growth of 56% and by 2026 will reach 8.147 trillion USD. In 2021, the share of e-commerce in the volume of retail sales worldwide was 19%. Forecasts indicate that by 2026, the online segment will account for 23.6% of total global retail sales (Statista, 2022). The increase in e-commerce market share is due to increased access to the Internet worldwide, increased availability of mobile devices, and by the constant improvement of online access to shopping, especially in online communities, primarily mobile, which have long been competing with traditional fixed broadband technologies.

In Europe, in 2021, 89% of the population of European countries used the Internet. In 2022, and according to preliminary estimates, there was an increase to 91%. In 2021, 73% of the population bought goods and services online (estimated to be 75% in 2022). The European e-commerce market in 2021 grew by 13% and reached a volume of 718 billion euros. Western Europe is the strongest region in terms of B2C e-commerce turnover. 63% of the entire turnover of the European digital industry is generated here. The share of southern EU countries is much smaller - 16%. Central and Northern Europe are respectively 10% and 9% of all EU e-commerce sales in 2021. The share of Eastern Europe is only 2% (Europe e-commerce report, 2022).

Table 5.1 shows the dynamics of Internet use and e-commerce sales in Ukraine and the EU.

Table 5.1 – The main indicators of the use of the Internet and electronic trade in Ukraine and the EU during 2017-2021, % (European e-commerce report, 2022)

Year	Using the Internet, %		E-trade, %	
	Ukraine	EU	Ukraine	EU
2017	59	83	20	65
2018	59	85	29	66
2019	59	87	35	68
2020	63	89	40	73
2021	64	91	44	75

The number of Internet users and the volume of e-commerce are growing rapidly in Ukraine and the EU. But due to the low purchasing power of Ukrainian consumers, the volume of e-commerce and Internet use in Ukraine is significantly lower than in the EU.

The Ukrainian e-commerce market is quite promising. It has the highest growth rates in Europe in recent years with very optimistic forecasts. In Ukraine, online trade is growing, the ICT industry is developing, which is the driver of the growth of the e-commerce market. The level of Internet penetration in Ukraine is the lowest among European countries: only 65% in 2021, in 2017 it was 59%. In Ukraine, 44% of Internet users made purchases online in 2021, which is more than 20% in 2017. The forecast for 2022 is 48% (European E-commerce Report, 2022). Table 5.2 presents the main indicators of the e-commerce development in the EU.

Table 5.2 – Indicators of the development of e-commerce in the EU, during 2017-2021, % (Eurostat, 2022)

Indicator	Year				
	2017	2018	2019	2020	2021
Enterprises selling through e-commerce	20	19	20	21	22
Enterprises with web sales:					
through websites, apps, or marketplaces	16	16	16	18	19
B2B and B2G	11	11	11	11	12
B2C	12	12	13	14	15
Enterprises with electronic commerce:					
in home country	19	n/a	19	n/a	22
in other EU countries	9	n/a	9	n/a	9
in other countries of the world	5	n/a	5	n/a	4
Enterprises with web sales through:					
own web-sites	13	14	14	15	17
e-commerce markets	6	6	6	8	8
online shopping by individuals	44	46	49	54	57

Over the past 5 years, from 19 to 21% of enterprises engaged in e-commerce, and from 44% to 57% of individuals bought online. Businesses are more likely to sell goods through websites, apps and marketplaces (17% on average). From 12% to 15% of European trade enterprises worked in the B2C segment, and from 11% to 12% in worked the B2B and B2G segments, respectively. Most of the businesses were engaged in e-commerce in their own country and sold goods through their own websites.

The dynamics of e-commerce sales in Ukraine is shown in Fig. 5.10

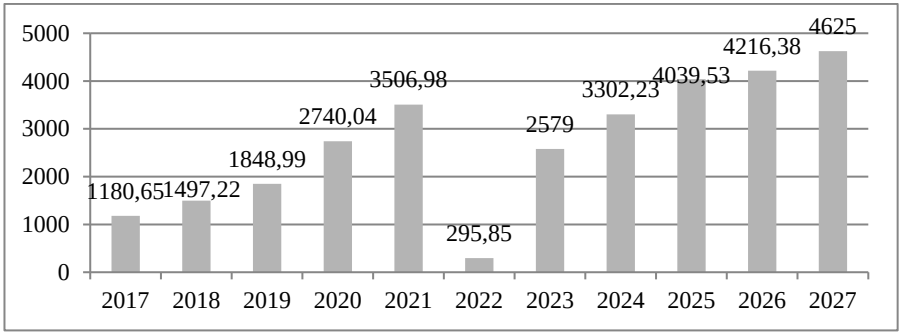

Figure 5.10 – E-commerce sales in Ukraine (actual data and forecast), million US dollars) (Statista, 2022)

In 2021, Ukraine became the 65th largest e-commerce market with a revenue of 1.1 billion US dollars (the market volume is more than 3.5 billion US dollars, which is about 2.6% of the country's GDP) (Statista, 2022). In 2021, the Ukrainian e-commerce market grew by 27% compared to the global growth rate of 15% and the European growth rate of 13%.

The development of e-commerce depends on basic factors, such as the lowest level of Internet penetration in Europe and the small number of online purchases (only 44%). The war threatens the Ukraine's economy and e-commerce. At the start of the Russian invasion in 2022, Ukrainian e-commerce sales dropped by 87%. Subsequently, the Ukrainian e-commerce market was restored to the conditions of the war, but the pre-war volume of trade was never reached. In total, e-commerce sales fell in 2022 to only 295.85 million US dollars (Statista, 2022).

Statista's forecast for 2023 is quite optimistic. In 2021, the e-commerce market volume is expected to reach 2,579 million USD. In 2027, it will become higher than in pre-war 2021. After the war, the economy of Ukraine and e-commerce will go up. Estimates indicate that the e-commerce market will grow to $4.6 billion by 2027 at a CAGR of 13.79%. These are the highest indicators among the countries of Central and Eastern Europe. User penetration in Ukraine will be 58.8% in 2023 and is expected to hit 63.6% by 2027 (Statista, 2022).

Despite a significant sales growth, Ukrainian e-commerce is still in its infancy. Further development of e-commerce takes place in the conditions of globalization and digitalization of international business. That is why it is important for Ukraine to improve the institutional and legal framework of e-commerce within the framework of integration into the EU DSM.

According to the DSM Strategy, the priority of improving consumer access to digital goods and services is the elimination of barriers in the field of electronic trade with EU countries (Dąbrowski et al., 2022). Therefore, the following goals have been established:

Formation of uniform e-commerce rules: simplification of trade agreements and protection of contractual obligations, protection of consumer rights, organization of a single European platform for online dispute resolution;

Organization of inexpensive and high-quality cross-border delivery of goods: today it is very expensive to deliver goods to Europe from Ukraine and vice versa, which hinders the development of cross-border online trade.

Combating unjustified geoblocking at the legislative level;

Better access to digital content and the introduction of European copyright enforcement system in Ukraine; cross-border access to services that are objects of intellectual property (video and audio production). The National Office for Intellectual Property and the Ministry of Economic Development have developed a draft of the National Strategy in the field of intellectual property for the period 2020-2030, which covers, in particular, issues of copyright and the digital economy;

Eliminating problems in paying VAT when selling across the border: implementation of an electronic registration and payment system (single declaration) and implementation of corporate tax taxation in the Single Market, according to which profits are taxed where value is created, especially in the digital economy (Kulchytskyy et al., 2019).

Ukraine has officially fulfilled its obligations under the Association Agreement regarding electronic commerce (implementation of The Electronic Commerce Directive (2000/31/EC), electronic signature, protection of consumer rights regarding electronic commerce and unsolicited commercial messages). At the same time, the implemented norms are not always harmonized with other legal acts of Ukrainian legislation and fully implemented in practice.

The main legal act for e-commerce regulation in Ukraine is the law "On electronic commerce", adopted on September 3, 2015. This law defines the organizational and legal principles of electronic commerce activities in Ukraine, establishes the procedure for conducting electronic transactions using information and communication systems, and determines the rights and obligations of participants in e-commerce relations.

The law defines "electronic commerce" as relations aimed at obtaining profit, which arise during the execution of transactions related to the acquisition, change or termination of civil rights and obligations, carried out remotely using information and communication systems, as a result of which the participants have propertial rights and responsibilities.

The law defines "electronic trade" as an economic activity in the field of electronic buying and selling, sale of goods remotely to the buyer by performing electronic transactions using information and communication systems.

The law specifies provisions on special participants in e-commerce – intermediate service providers. The law includes providers of electronic communication services, operators of payment infrastructure services, registrars (administrators) assigning network identifiers, and other entities

that ensure the transmission and storage of information using information and communication systems. Participants in electronic commerce are also third parties who technically accompany the electronic transaction.

This law introduced the concept of an electronic transaction (agreement) for the first time in the civil legislation of Ukraine.

The above provisions are fully consistent with the Electronic Commerce Directive 2000/31/EC, which is the fundamental legal framework for online services in the EU. Corresponding changes directly related to e-commerce have been made to the Laws "On electronic digital signature", "On electronic documents and electronic document management", "On protection of consumer rights", "On protection of personal data", "On advertising" and others.

According to the Action Plan on implementation of the Association Agreement, the Ministry of Digital Transformation should develop a new e-commerce law based on the said Electronic Commerce Directive by 2023 (Kulchytskyy et al., 2019).

Meanwhile, new legislation is being developed in the EU in order to update the norms governing e-commerce. At the beginning of 2022, it was agreed to replace the current Ukrainian legislation with two new ones laws – "On Digital Services" and "On Digital Markets". In July 2022, these draft laws were adopted by the European Parliament.

Ukraine has also taken important steps in the framework of legislative implementation in e-commerce. In 2021-2022, the laws "On mediation" (entered into force), "On payment services" (entered into force), "On cloud services" (entered into force), "On virtual assets" (not entered into force yet) were adopted.

The driver of Ukrainian e-commerce development will be accession to the EU. Since the beginning of the Russian invasion, preparations for Ukraine's accession to the EU have accelerated, including e-commerce.

In the EU, there have been important changes in the field of legal regulation of e-commerce in recent years. From July 1, 2021, new VAT rules were introduced in online trade. Now, any import of goods from abroad is subject to VAT (Litz et al., 2021). In Ukraine, in the field of European integration, enough laws have been adopted and existing ones, for example, the Law "On Electronic Commerce", have been adapted to EU norms. However, at the same time, there were other changes in the legislation regarding e-commerce enterprises in the EU. For example, in the EU, on Internet sites, sellers must show the criteria for selecting goods for sale, their price and the dynamics of its changes. All buyers have equal

rights, regardless of the location of the seller and the buyer. That is, geoblocking has been canceled and free access to online goods and services has been ensured. In Ukraine, the supply of digital services is still not regulated, while in the EU such regulation takes place at the state level.

All B2C sales of goods will be taxed in the country of destination, meaning that sellers will need to collect VAT in the EU member state to which the goods are shipped. The existing thresholds for distance sales in the EU will be abolished and replaced by an EU-wide registration threshold of €10,000. Also, the EU has a "One Stop Shop" reporting system (OSS) for declaring all cross-border B2C sales through a tax portal in member states (Litz et al., 2021). In Ukraine, the legislation has not yet come close to the EU legislation in these areas, so some e-commerce companies work in the shadows. If these aspects are eliminated and adapted to European e-commerce, Ukraine can significantly change the situation of e-commerce already in 2030, as it is currently growing at the highest rates compared to the Eastern European countries.

Digital infrastructure issues remain relevant, including Internet speed, access, and low number of unique Internet users. According to the latest data from the International Telecommunication Union (ITU), as of 2019, the level of Internet penetration in Ukraine was 70.1%. As of 2020, fixed broadband penetration was 18.62% and mobile broadband penetration was 85.3% (Freedomhouse, 2022). Internet availability and ease of access vary by region. Since September 2020, the National Commission, which carries out state regulation in the field of communication and informatization, is obliged to publish in public access data on the penetration of fixed broadband Internet by settlements (Freedomhouse, 2022). Some non-government-controlled areas in the war zone suffer from poor internet connectivity.

In 2022 the number of smartphone users in Ukraine reached 76.59% (Statista, 2023). Mobile Internet speed remains low. According to Ookla, the average mobile download speed in April 2021 was 30.47 megabits per second (Mbps), compared to a global average of 53.38 Mbps. Average fixed broadband speeds were much higher, according to Ookla, at 67.52 Mbps for Ukraine and 102.12 Mbps globally (Freedomhouse, 2022). In November 2020, the government adopted a step-by-step plan for the implementation of the fifth generation (5G) technology. The government has set the start of 5G deployment in 2022, first in the largest cities.

The Ministry of Digital Transformation continues to collect up-to-date information on Internet coverage and speed across the country through

a special website. At the end of September 2020, the government approved a plan of measures to improve the quality of mobile communication services for 2020-2022, which provides for greater transparency between mobile operators (Freedomhouse, 2022).

Internet scam is a serious problem. In Ukraine, there is still no legal norm regarding the mandatory deposit of the consumer's funds to the marketplace account or bank account when making a prepayment. Similar obligations in other EU countries (Germany, Austria) reliably protect online buyers from Internet scammers. Scam in e-commerce in Ukraine is also facilitated by the fact that, by law, online sellers are not obliged to provide registration data about their company. They can publish with impunity fictitious data, the authenticity of which is not verified by competent state authorities. Organizers of scam schemes post disposable phone numbers, and after receiving a subscription for non-existent goods, simply disappear. Ukrainian legislation is imperfect, and there is no effective control body for the protection of consumers in e-commerce, as well as a separate section on online trade in the law "On the Protection of Consumer Rights".

The e-commerce legislation in Ukraine lacks protection tools for online buyers. In order to eliminate the existing problems, it is necessary to adopt a law on the protection of consumer rights in e-commerce and to include in it some valid specifications that are in force in the EU countries (Nochvai et al., 2021). For example, persons who have not provided registration information, i.e. have not verified company data or passport data of an individual entrepreneur, cannot sell goods and services on the Internet. It is also necessary to give the competent authorities the power to block the web-sites and online stores that do not meet the identification requirements. In addition, it is necessary to properly regulate the mechanism of depositing funds in a banking institution or to the account of the marketplace. This works effectively in China: sellers can receive funds from consumers only after fully fulfilling their obligations. You can also officially register honest online stores on the website of the regulator. This tool complies with the European model of consumer rights protection. An example can be the introduction of a public register of conscientious sellers at the tax authorities of Germany, France and Switzerland (Titamyr, 2020).

In Ukraine, issues related to the protection of consumer rights, the conclusion of contracts for the supply of digital content and digital services, payments in e-commerce, etc., remain unsettled and not harmonized with the norms of EU law. In Ukraine, there is a large shadow e-commerce

market that is beyond the reach of state control and supervision bodies. Contraband products can be sold in stores with impunity without confirmation of their safety and quality characteristics. There is still no single body responsible for the formation and implementation of a comprehensive state policy in e-commerce. Therefore, in Ukraine, it is necessary to form policies coordinated with the EU, taking into account strategic documents, EU acts and declared goals in a complex, and not in isolation from each other (Taptunova, 2021).

Ukraine needs to develop a national road map for harmonizing e-commerce and e-logistics systems with EU countries. It is necessary to harmonize the legal framework in e-commerce, customs clearance and electronic logistics with the relevant legal acts of the EU. Pilot systems should be implemented, for example, a cross-border e-commerce system and systems for the operation of a digital logistics corridor between the Baltic and Black seas (Kulchytskyy, 2019).

In the context of Ukraine's cooperation with the EU, Ukrainian e-commerce should achieve the following results by 2030:

1. In the field of digital infrastructure and skills: coverage by new high-speed communication standards; implementation of the technological platform of state registers; high level of basic and professional digital skills.

2. In the field of ICT: implementation of English-language study programs at leading IT departments and involvement of students from all over the world; creation of laboratories, paltforms and hubs for the development of new technologies (FinTech, AgriTech, drones, self-driving cars, Internet of Things networks, artificial intelligence, digital currencies) (Kyrychenko, 2022).

3. In the field of digital transformation of the economy and society: introduction of digital services in key life areas. Modernization of business, construction of technological factories, production of products with high added value. The emergence of new industries and professions that create new prospects for economic growth.

4. In the field of integration into the EU digital space: harmonization of digital identification and trust services with the EU; full interoperability of Ukrainian registers; settlement of ethical issues of syber security, personal information, and cyber technologies.

Global digitalization has contributed to the rapid development of international trade and the growth of its scale. Such changes provide Ukrainian enterprises with opportunities to access new markets, as well as significantly expand existing ones. New methods of competitive business

are emerging. In the Law of Ukraine “On Electronic Commerce” and other legal acts, certain issues of harmonization with the norms of EU law remained unresolved. In particular, these are unresolved issues of electronic payments, the activities of e-commerce entities and their use of electronic trust services, the protection system and the regulator of e-commerce consumer rights and their personal data. In order to improve Ukrainian consumers’ access to digital goods and services, it is necessary to develop a national road map for the development of e-commerce in Ukraine, harmonized e-commerce systems with EU countries in accordance with the requirements of the EU DSM, continue to make changes to mail Ulrainian laws for harmonization with EU legislation.

The main problems in the Ukrainian e-commerce market due to the Russian invasion of the territory of Ukraine are problems with logistics, full or partial shutdown of many enterprises and marketplaces, interruptions in the work of the Internet, the transition to a war economy, which led to the decline of the e-commerce market. There are problems with the legal framework, which should be updated taking into account the speed of ICT development and should be brought into line with the Association Agreement between Ukraine and the EU regarding the transition from electronic digital signature and electronic document to full regulation of trust services. Internet scam is also developing in Ukraine, which also inhibits the development of e-commerce and is associated with the imperfection of the legal framework and regulation. Solving this problem is related to the adoption of relevant laws, verification of e-commerce entities, and regulation of the deposit mechanism. Despite the existing laws, the factors affecting the further development of e-commerce in Ukraine remain unresolved. These are large-scale smuggling and sale of goods through online stores, trade and exchange of illegal goods, services and content on the Internet. The system of protection of consumer rights, in case of their violation during the purchase via the Internet, remains imperfect. The development of legislation will contribute to the eradication of these phenomena. The rapid development of online platforms requires fundamental changes in the legislation of countries, as well as active actions of the state to protect the interests of all participants in electronic commerce. The development of e-commerce in Ukraine will stimulate economic growth and investment by Ukrainian companies in innovative technologies, as well as strengthen the competitiveness of Ukrainian business.

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Conclusions

The results of scientific research, conclusions, and recommendations together form the basis for implementing the principles of the EU cohesion policy and healthy national development in Ukraine.

The authors revealed the essence and significance of EU Cohesion policy as one of the directions of reforming the national development. Common and different vectors of regional policy development of Ukraine and the EU are identified. Considering the gradual integration of Ukraine into the EU, attention is paid to the economic, environmental, and social aspects of Ukraine's European integration. The prospects for developing the green economy in Ukraine and the experience of the EU region regarding the peculiarities of its implementation are considered. The necessity of harmonizing the educational services market of the EU and Ukraine was determined. The importance of cohesion policy as a component of national policy in wartime and post-war reconstruction conditions is revealed. Special attention is paid to studying the impact of the Russian-Ukrainian war on the change in the format of cooperation between Ukraine and the EU and international food security. A scientific approach to assessing the effects of the war on post-economic recovery is proposed. The role of corporate social responsibility practices in shaping the cohesion of territorial communities in war conditions is determined. The authors paid particular attention to managing the healthcare system in Ukraine and EU countries. In particular, an analysis of the European experience of managing the healthcare system was carried out; the trends and prospects of achieving the state of the medical and social welfare system resilience of the population in the context of the COVID-19 impact on the national economy as a whole and the financial support of the health care system in Ukraine, in particular, have been investigated. The authors also determined the prospects for implementing innovative projects in the healthcare field in Ukraine. Theoretical and methodological approaches are proposed to improve the quality management system of medical services and increase the medical institutions' competitiveness. The theoretical and methodological principles of the use of marketing technologies in the context of the healthy development of the region have been developed and supplemented. Special attention is paid to the study of the impact of artificial intelligence and the management of the behavior of human resources on the results of management decision-making by economic agents in the digital space. The possibilities of using neuromarketing research and artificial intelligence tools to popularize a healthy lifestyle in Ukraine are also considered.

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