ENVIRONMENTAL SECURITY — AN IMPORTANT EUROPEAN INTEGRATION VECTOR OF UKRAINE

The article examines the essence and main factors of influence on the environmental safety of Ukraine, defines the main directions of its provision. The position of Ukraine in important international ratings regarding environmental safety has been studied. The main transformational vectors of the state mechanism of environmental safety management in Ukraine are singled out. The following are identified as the main environmental threats to national security: negative environmental consequences of the Chernobyl disaster; inefficient use of natural resources, large-scale use of environmentally harmful and imperfect technologies; uncontrolled import into Ukraine of environmentally hazardous technologies, substances and materials; negative environmental consequences of military actions on the territory of Ukraine. The main challenges in the field of environmental security in the pre-war period in Ukraine are defined as follows. Ecological and climatic components were not taken into account when developing strategies, there was an ineffective management system of the forest sector, the structure of the country's lands is ecologically unbalanced, there is irrational water use, a high level of toxic, microbial and biogenic pollution. At the moment, there is an inconsistency of industry strategies, policies and plans with climate planning documents, significant amounts of accumulated waste, and a low percentage of waste recycling. In Ukraine, there are currently no tax incentives and state support for business entities in the direction of increasing investments in environmental protection measures. A significant proportion of the population of Ukraine lacks access to safe drinking water and proper sanitation. The main directions regarding environmental security are rational nature management, state management, monitoring and control, implementation of the principles of sustainable development and gradual transition to a "green economy". Within the framework of these directions, it is necessary to make the activities of environmental protection funds transparent and effective, to ensure that Ukraine fulfills its obligations in accordance with international conventions, to improve the structure of the country's land, to ensure sustainable use and protection of land, balanced use of water resources. It is mandatory to integrate the ecological and climatic component into the policies and programs of national and local development, to create a tax, credit and investment climate for involvement in environmental protection activities.
FORMULATION OF THE PROBLEM

Achieving high environmental standards in Ukraine, which are the norm for the countries of the European Union, was a difficult task even in the pre-war period. Compliance of the ecological situation of Ukraine with the level of European countries can be achieved only by observing the conditions of ecological safety. Building an environmental safety system involves reforming the management policy of the environmental protection system, implementing the principles of sustainable development and a gradual transition to a "green economy", building an adequate system of motivation and stimulation of business entities to comply with environmental requirements, modernization of enterprises in accordance with EU standards.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

Many modern scientists direct their research in the direction of prerequisites for the development of environmental security. Many modern foreign researchers direct their research in the direction of the influence of human activity on ecology both in general and in the section of individual regions.

Thus, V. Dobruskin in his work [1] examines the impact of energy produced by civilization on global warming. The author gives a quantitative assessment of the impact of energy produced by civilization on the atmosphere.

The work of J. Jabbour and C. Hunsberger [2] is devoted to the study of relationships between environmental change factors and pressure on terrestrial ecosystems.

The work [3] considers the existence of general early warning signals that can indicate the approach of a critical threshold for a wide class of systems. We are talking about complex dynamical systems, ranging from ecosystems to financial markets and the climate, can have tipping points at which a sudden shift to a contrasting dynamical regime may occur.

The majority of modern domestic studies of this problem are aimed at revealing the essence and legal provision of environmental safety, tools for assessing its level, means and criteria for diagnosing the condition.

Research by Khilko M.I. devoted to the problem of environmental security as a state of protection of every individual, society, and state from excessive threatening environmental hazards. The work analyzes the methodological principles of environmental safety, its origins, essence, evolution, tools; systematic assessments of the state of natural systems of Ukraine in general and regions in particular.
hydrosphere, lithosphere and biosphere), their impact on human health; the priority areas of state policy regarding the neutralization of threats to Ukraine's ecological security are analyzed [4].

In the work of Stalinska I.V. [5] the basic concepts and definitions of ecological safety are revealed, the main components of the ecological safety system of Ukraine are considered, and the threats to ecological safety of Ukraine are identified. V.S. In his article, Dudyuk examines the main theoretical approaches to defining the concept of "environmental security" and the main legal aspects of regulating economic security in Ukraine [6].

In the study of Varlamova V.S. [6] considered the concept of "environmental safety" from the point of view of its identity with the concept of "environmental protection". The approaches to the definition of the concept of "environmental safety" are singled out. It is substantiated that the concept of "ecological safety" is defined as a state of protection of the system "man — society — nature" as a result of the action of natural and anthropogenic factors.

FORMULATION OF THE GOALS OF THE ARTICLE

The purpose of the article is to determine the prerequisites for improving the ecological security of Ukraine in the conditions of martial law, the means of ensuring it based on the involvement of the international community.

MATERIALS AND METHODS

To achieve the goal, general scientific methods were used, including methods of logical generalization, abstraction and formalization, synthesis and analysis, induction, analogies, etc.

PRESENTATION OF THE MAIN MATERIAL OF THE STUDY

According to Article 50 of the Law of Ukraine "On Environmental Protection", ecological safety is the state of the environment, which prevents the deterioration of the ecological situation and the occurrence of danger to human health. Environmental safety is guaranteed to the citizens of Ukraine by the implementation of a wide range of interrelated political, economic, technical, organizational, state-legal and other measures, and the activities of individuals and legal entities that cause damage to the surrounding natural environment can be stopped by a court decision [8].

According to the statement [9], environmental safety creates mechanisms to prevent degradation and improvement of the environment, care for the health of the people, formation of social, legal and economic conditions that would exclude damage to the environment by other countries of the world, their state structures, entrepreneurs and individual citizens, maintenance of such a state of the natural environment that provides normal conditions for the life of the population and social reproduction; prevention of environmental threats; prevention of deterioration of the ecological balance and danger to human health, society, nation; identification of sources of environmental risk from man-made, economic, social, political structures and ways of its prevention; protection of natural resource and human potential of the state.

Environmental security is a component of national security that guarantees the protection of the vital interests of man, society, the state, and the environment from real or potential threats created by natural or anthropogenic factors. In addition, the ecological component of each of the specified types of security can become the integrator that will unite them in the system of national security, help to find their optimal ratio in this system. Moreover, today there is no doubt that any aspect of national security, be it economic, technological or defense, loses its meaning if the environment is unsuitable for human life and activity.

Ecological threats to national security are associated with significant anthropogenic disturbance and man-made overloading of the territory of Ukraine, negative ecological consequences of the Chernobyl disaster; inefficient use of natural resources, large-scale use of environmentally harmful and imperfect technologies; uncontrolled import into Ukraine of environmentally hazardous technologies, substances and materials; negative environmental consequences of defense and military activities [5].

The study of Ukraine's place in international metrics is of great importance. An important indicator of the degree of implementation of "green economy" principles by individual countries is the Global "Green Economy" Index. It was created by the Dual Citizen rating agency in 2010 and measures the efficiency and progress in the "green" economy in 130 countries of the world based on an expert survey. The index uses quantitative and qualitative indicators to measure each country's performance on four indicators: climate change management and change (media coverage, international forums, climate change...
Environmental Performance Index is another important indicator. This is a comprehensive indicator of the assessment of the environmental policy of the state and its individual subjects. The index is calculated based on 24 performance indicators across ten categories covering health, environment and ecosystem viability. In 2020, Ukraine took 60th place out of 180 countries, receiving 49.5 points out of 100.

The Law of Ukraine "On the National Security Strategy of Ukraine" defines a number of threats to national interests in the environmental sphere. They are: — excessive anthropogenic influence and high level of technogenic load on the territory of Ukraine; — negative environmental consequences of the Chernobyl disaster; — irrational, exhausting use of mineral and raw natural resources; — a significant volume of production and consumption waste and an inadequate level of their secondary use, processing and disposal; — unsatisfactory state of the unified state system and forces of civil protection, environmental monitoring system; — increasing risks of man-made and natural emergency situations; — deterioration of the ecological condition of water basins, aggravation of the problem of transboundary pollution and reduction of water quality; aggravation of the man-made state of hydrotechnical structures of the cascade of reservoirs on the Dnipro River; — uncontrolled import into Ukraine of environmentally dangerous technologies, substances, materials and transgenic plants, pathogens, etc.; the danger of man-made and biological terrorism, etc. [11].

Environmental security is a state of protection of the natural environment and population from threats arising from anthropogenic and natural influences. The concept of environmental safety involves a system of regulation and management that allows predicting, preventing, and in case of occurrence — eliminating the consequences of emergency situations.

The following main factors of ecological danger can be distinguished — natural, socio-economic, man-made, military. It is the military factor in modern conditions that has the greatest negative impact on Ukraine's environmental security. A particularly dangerous threat to environmental safety during hostilities is the radiation threat that may arise due to damage or non-compliance with the operating conditions of nuclear plants. The seizure of the Chernobyl nuclear power plant by the Russian military, followed by the seizure of Europe's largest Zaporizhzhia nuclear power station, poses a very great danger. The problem of averting an ecological threat to the environment requires special attention.

The development of national security, and one of its components — environmental security, in the situation of military operations taking place on the territory of Ukraine is of great importance. In such a situation, the risk of man-made disasters increases, in particular due to improper maintenance or physical damage due to shelling, as well as the possibility of other negative processes that can cause negative consequences at nuclear plants. Therefore, the effective strategy of environmental security of Ukraine in modern conditions of military operations should correspond to such a variant of the development of events with the involvement of the international community, in which the risk of disasters and minimal loss of human and natural resources will be excluded.

The armed aggression of the Russian Federation against Ukraine caused new threats to environmental security. In particular, one of the threats is the consequences of mining and contamination of agricultural lands with explosive objects and mines. To neutralize the threat of pollution and degradation, it is necessary to conduct an assessment and take measures to reduce environmental risks in the war zone. In order to overcome the threatening situation in the field, measures should be taken to create and ensure the proper functioning of the relevant national system.

The mining of natural landscapes and agricultural lands poses a serious threat to the life and health of citizens, creates a whole range of ecological threats to the main components of the environment, including the state and level of fertility of soils, plants, and ecosystems. These and other effects are significantly increased due to the distant negative consequences of exposure to products of mine explosions, equipped with detonation delay systems, and explosive devices on natural objects, forest plantations, and soils.

Mine explosions lead to significant chemical contamination of soils with heavy metals, including lead, strontium, titanium, cadmium, and nickel. In turn, the high concentration of heavy metals and toxic substances, caused by explosive substances entering the soil and their decomposition, makes the soil dangerous, and in some cases unsuitable for further agricultural use.
The practical implementation of comprehensive measures to minimize the impact of mining on landscapes and agricultural lands with the involvement of international organizations will reduce the number of victims among the population and the negative consequences of the impact of explosive objects on the state of the main components of the environment. In particular, there was an urgent need to develop measures to assess damages and minimize the negative impact of mining on natural landscapes and agricultural lands, as well as to ensure the possibility of their use in agricultural production after demining.

The detonation of explosive objects provokes the occurrence of forest fires, which can lead to new explosions, which greatly complicates their extinguishing. Explosive munitions also cause brush, forest and grass fires in the steppe zone of the country, especially during the dry season. In addition to habitat destruction and destruction of wildlife, uncontrolled wildfires also cause economic losses, as they damage property and natural tourist sites, pollute air and water sources [12].

The scale of the problem is illustrated by the data of the State Emergency Service of Ukraine: demining requires about 300,000 square meters. km, i.e. almost half of the territory of Ukraine. Pyrotechnic units of the state service from emergency situations remove and neutralize from 2 to 6 thousand explosive objects every day — ten times more than before the Russian invasion [13].

Large-scale fires at infrastructure and industrial facilities lead to air poisoning with particularly dangerous substances. Pollutants can be carried by winds over long distances.

Russian troops are carrying out targeted strikes on the infrastructure for the intake, purification and supply of water, as well as sewage treatment facilities. Due to Russian aggression, water supply and drainage facilities in Luhansk, Donetsk, Zaporizhzhia, Kharkiv and Mykolaiv regions were significantly damaged.

Russian troops have placed a large number of mines in the waters of the Black Sea, which threaten both shipping and people and marine animals in Ukraine and other countries of the Black Sea region.

Despite the war, Ukraine continues to implement European integration reforms in the field of environmental protection. On August 16, the parliament supported in the first reading draft law No. 5159 "On Amendments to Certain Laws of Ukraine Regarding the Introduction of Liability for Violation of the Procedure for Carrying Out a Strategic Environmental Assessment." This draft law will help prepare the ground for an ecologically balanced recovery of the country from the consequences of the war.

The main challenges in the field of environmental security in the pre-war period in Ukraine were as follows. In the sphere of state management and control: the environmental component was not taken into account when developing state and industry strategies, there was insufficient financing of the sphere of environmental protection. Mechanisms for regulating the use of natural resources are not coordinated in the field of rational nature management. Developed sectoral strategies, policies and plans are not aligned with climate planning documents. The regulatory and legal system in the field of chemical safety has a fragmented and uncoordinated nature, there is no comprehensive management of chemical safety and management of chemical products.

The main goal in the post-war period for Ukraine is to build the state’s capacity to meet energy needs in a technically reliable and safe, economically efficient and ecologically acceptable way, to ensure sustainable functioning of the economy under any conditions. The energy policy of Ukraine should be aimed at organizing access to inexpensive, reliable, sustainable and modern sources of energy for all consumers. Providing electricity during the heating season is especially relevant. The main external priority will be to overcome the critical dependence of the national economy on any one source, route or supplier of energy resources and technologies. The state should promote competition in energy markets. Energy development should not be accompanied by an increase in its negative impact on the environment. It is necessary to carry out a quick and full harmonization of Ukrainian and European energy legislation. Ukraine’s efforts must be directed to the full integration of Ukrainian energy into the European energy space.

In order to overcome the negative environmental consequences of the Chernobyl disaster, Ukraine must ensure radiological protection and safety in the territories that have experienced radioactive contamination as a result of the accident at the Chernobyl nuclear power plant. At the same time, it is necessary to develop economic activity in the territory of the exclusion zone, subject to unconditional compliance with radiation safety standards.

In the pre-war period, the following environmental safety challenges were present in Ukraine. There was an ineffective management system of the forest industry, the structure of the country’s lands is ecologically unbalanced, there is irrational water
use, and a high level of toxic, microbiological and biogenic pollution. At the moment, there is an inconsistency of industry strategies, policies and plans with climate planning documents, significant amounts of accumulated waste, and a low percentage of waste recycling. In Ukraine, there are currently no tax incentives and state support for business entities in the direction of increasing investments in environmental protection measures.

A significant proportion of the population of Ukraine lacks access to safe drinking water and proper sanitation.

The main areas of environmental security are rational nature management, state management, monitoring and control, implementation of the principles of sustainable development and gradual transition to a "green economy". Within the framework of these directions, it is necessary to make the activities of environmental protection funds transparent and effective, to ensure that Ukraine fulfills its obligations in accordance with international conventions, to improve the structure of the country’s land, to ensure sustainable use and protection of land, balanced use of water resources. It is mandatory to integrate the ecological and climatic component into policies and programs of national and local development, to create a tax, credit and investment climate for involvement in environmental protection activities.

CONCLUSIONS

The main external threats to Ukraine’s environmental security include, in particular, the greenhouse effect and global warming, and internal threats include man-made emergencies, in particular those that may be provoked by the war in Ukraine. Ukraine's transition to the “green economy” model is possible only under the conditions of modernization of all sectors of the economy through the transition to energy-saving, resource-efficient and cleaner production technologies. Currently, this transition is also complicated by the negative consequences caused by military actions on the territory of Ukraine. Overcoming existing and new environmental threats, improving the state management system in the direction of ensuring environmental safety is an important task of our state, especially within the framework of European integration. The priority directions for the future development of the environmental security system in the new European integration conditions are the activation of cooperation of all countries of the world, the involvement of international organizations in the prevention of possible man-made disasters on the territory of Ukraine and the preservation of the environment. minimal loss of human and natural resources.

АГРОСВІТ № 17—18, 2022
13. Dержавна служба України з надзвичайних ситуацій. Розмінування потребує майже половини території України URL: https://www.ukrinform.ua/rubric-ato/3454649-rozminuvanna-potrebuemajze-polovinateritorii-ukraini-dsns.html (дата звернення: 15.08.2022).

References:
1. Dobruskin, V. (2022), “The Impact of Energy Produced by Civilization on Global Warming”, Open Journal of Ecology, vol. 12, pp. 325—332. doi: 10.4236/oje.2022.126019.
2. Jabbour, J. and Hunsberger, C. (2014), “Visualizing Relationships between Drivers of Environmental Change and Pressures on Land-Based Ecosystems”, Natural Resources, vol. 5, pp. 146—160. doi: 10.4236/nr.2014.54015.
3. Scheffer, M., Bascompte, M., Brock, J., Brovkin, W.A., Carpenter, V., Dakos, S.R., Held, V., van Nes, H., Rietkerk, E.H. and Sugihara, G. (2009), “Early-Warning Signals for Critical Transitions”, Nature, vol. 461, pp. 53—59. http://dx.doi.org/10.1038/nature08227
4. Khilko, M. I. (2017), Ekolohichna bezpeka Ukraїni [Environmental security of Ukraine], Kyiv, Ukraine.
5. Stalinska, I.V. (2017), Zabezpechennia ekolohichnoi bezpекy [Ensuring environmental safety], Kharkiv, Ukraine.
6. Dudyuk, V.S. (2015), “Theoretical approaches to defining the concept of economic security”, Naukovyi visnyk NLTU, vol. 25.5, pp. 130—135.
7. Varlamova, I.S. (2017), “Theoretical approaches to the definition of the concept of “environmental safety”, Naukovyi visnyk Khersonskoho derzhavnoho universytetu, vol. 23, pp. 161—164.
8. Verkhovna Rada of Ukraine (1991), Law of Ukraine “On Environmental Protection”, available at: https://zakon.rada.gov.ua/laws/show/1264-12#Text (Accessed 15 August 2022).
9. Yakibchu, O.V. (2014), “Peculiarities of environmental security of Ukraine in the system of national security”, Visnyk Kyivskoho natsionalnoho universytetu, vol. 28, pp. 100—104.
10. GGEI (2018), “2018 Global Green Economy Index”, available at: https://www.greengrowthknowledge.org/research/2018-global-green-economy-index-ggei (Accessed 15 August 2022).
11. President of Ukraine (2022), Decree “On the decision of the National Security and Defense Council of Ukraine dated December 30, 2021 “On the Strategy for Ensuring State Security”, available at: https://zakon.rada.gov.ua/laws/show/56/2022#Text (Accessed 15 August 2022).