

Review Paper

# The Role of Environmental Insurance in “Green” Post-War Rebuilding of Ukrainian Regions

Olena Shebanina<sup>1</sup>, Iurii Kormyshkin<sup>2</sup>, Georgiy Reshetilov<sup>2</sup>, Iryna Allakhverdiyeva<sup>2</sup> and Alona Kliuchnyk<sup>2\*</sup>

<sup>1</sup>Faculty of Management, Mykolayiv National Agrarian University, Mykolayiv, Ukraine

<sup>2</sup>Department of Public Administration and Administration and International Economy, Mykolayiv National Agrarian University, Mykolayiv, Ukraine

\*Corresponding author: kliuchnyk\_a@ukr.net (ORCID ID: 0009-0001-1873-7487)

Received: 20-12-2022

Revised: 21-03-2023

Accepted: 27-04-2023

## ABSTRACT

Environmental insurance is top priority in a given scope of issues because it represents effective mechanism of risk regulation, formulating legal guarantees and providing significant instrument for implementing environmental-economic processes. Existing rudimentary mechanisms of environmental insurance in Ukraine are limited in nature and unable to fulfil the tasks set, notably under burdens of determinism and increased risks of war and post-war periods. The authors have set a study goal to evaluate preconditions of environmental insurance in post-war Ukraine and to define main priorities, primary tasking algorithms and specifics of environmental risk insurance in circular economy. The researchers applied empirical methods for study of scientific materials and regulatory documents and conducted their description and comparison. The authors analysed major approaches to implementation of mandatory environmental insurance strategy in Ukraine and gave broad definition of its structural elements and priority principles. They conducted analysis of regulatory and legal base, explored opportunities of engaging “green” insurance providers to national environmental insurance system. There has been a suggestion of variability in environmental insurance approaches with possibility to differentiate by risks, fields of economy and by regional distribution. The researchers have undertaken a forecast of effective implementation for economy, environmental protection and social area. They concluded about the need of preventive changes in economic and legal field and maximum implementation of international experience in national environmental insurance system with account of specific influence of certain factors, notable for post-war period in Ukraine.

## HIGHLIGHTS

- The article aims to evaluate the preconditions and priorities of environmental insurance in post-war Ukraine, analyze existing mechanisms, explore the implementation of mandatory environmental insurance, define structural elements and priority principles, and suggest the need for preventive changes and the incorporation of international experience in the national environmental insurance system.

**Keywords:** Circular Economy, Environment, Environmental-Economic Policy, Insurance, Strategic Directions

The destructive long-effect aftermaths of military activities in Ukraine combining with existing risks for industry and economy stipulate the need to develop and implement brand new and bold complex solutions in environmental and economic policy of Ukraine, which simultaneously provide

**How to cite this article:** Shebanina, O., Kormyshkin, I., Reshetilov, G., Allakhverdiyeva, I. and Kliuchnyk, A. (2023). The Role of Environmental Insurance in “Green” Post-War Rebuilding of Ukrainian Regions. *Econ. Aff.*, 68(Special Issue): 845-851.

**Source of Support:** None; **Conflict of Interest:** None



flexible and variable approach in complicated conditions of post-war regeneration. One of the modern effective solutions of the problems arising at the crossroads of economic and environmental interests is implementation of environmental insurance of economy subjects, whose activity is the source of increased ecological hazard. The authors V. Shevchuk *et al.* (2000) regard environmental audit as preventive step in environmental insurance system implementation. The issue of environmental risk insurance funds significant coverage in the works of the authors S. Kozmenko (2012), O. Protsenko (2012) and S. Vasylychenko (2003).

However, there is no common view on environmental insurance vectors and their state regulation, while existing instruments do not give any chance to apply the broad spectrum of environmental risk insurance parameters thus minimizing process efficiency in modern reality. Therefore, regardless of considerable body of work in this field, the authors make a point about the need for adaptation of theoretical fundamentals to post-war rebuilding in Ukraine. The practical aspects of research into environmental insurance as effective instrument nationwide require detailed study with account of successful international experience and existing prospects of post-war reality. It necessitates complex approach, reaching all economy branches, which will create efficient mechanism of environmental transformation of national economy of Ukraine in post-war period. This approach should combine ecological-friendly product principles, reduction of effects on environment, economic stimulation of effective resource use and increased responsibility for environmental damage. All these aspects mirror principal fundamentals of circulatory economic model and therefore ecology and economy of today ultimately require simultaneous attention as they represent integral parts of single process of steady development. The authors present a selection of European and American articles serving the important basis for assessment and successful implementation of international experience in the field of environmental insurance (Arnold, 2012).

The purpose of this article is to forecast the efficiency of mandatory environmental insurance in the process of “green” post-war rebuilding of Ukrainian regions with implementation of main principles of circular economy and European

Green Deal strategy when determining post-war restoration specifics of Ukraine. The authors suggest complex approach, which gives an opportunity to define strategic directions of environmental insurance of Ukraine during “green” post-war recovery of country regions.

## MATERIALS AND METHODS

The authors of this study investigated theoretical and regulatory aspects of national and international environmental insurance and provided definition of its existing mechanisms. They have analysed, systematized information and scientific works using method of comparison, and revealed the weaknesses of this problem. The researchers covered in detail the modern aspects of follow-up studies by comparing them with existing degrees of environmental insurance process development in a representative sample of countries and conducted the primary processing and evaluation of factors in their interconnection. The authors carried out corresponding generalization and forecasting of possible changes and dynamics and developed principles of action and recommendations for practical application of environmental insurance system in Ukraine with variability in managerial and economic decisions. They used a systematic approach to determine the role of environmental insurance in “green” post-war rebuilding of Ukrainian regions to ensure integrity mechanisms of the study. There is a particular attention to the system dynamics in current military and post-war periods, its relevance and flexibility with focus on development and improvement.

In the course of the study, the authors used empirical methods of scientific research. They provided information serving as the basis for further theoretical understanding in specific study processes. The researchers used the methods of comparison, evaluation as well as comparative-descriptive method and method of associations and analogies. Afterwards the authors summarized and analysed the results. A certain number of scientific publications, regulatory documents, monographs and the results of already conducted studies underwent analysis at the initial research stage. Using observation method, the authors conducted preliminary classification of the facts and principles of the study object by assessing and

systematized its properties. The authors analysed main international principles of environmental insurance functioning in the context of circular economy and sustainable development. There was a comparison of preconditions and factors determining environmental risk insurance system in Ukraine and in other countries with successful experience in this field. The researchers established similarities and differences as well as common principles inherent in most of them, which can become the basis for a successful start of the environmental insurance system in the post-war period of restoration and rebuilding of the economic system. The authors generalized typical features and patterns as well as opportunities and obstacles of the subject matter. They investigated factors that cause difficulties for implementation of successful foreign experience in Ukrainian realities, developed differentiation and grading system of insurance payments and envisioned main vectors of further development of environmental insurance in Ukraine.

## RESULTS AND DISCUSSION

The relentless increase of damage scale to the environment and the population caused by military operations on the territory of Ukraine together with the inevitable consequences for economic activity necessitate the introduction of effective mechanisms that could prevent the occurrence of environmental accidents and incidents as well as fully compensate losses due to environmental pollution to individuals and legal entities. The global trend of environmental orientation of new projects in any sector of economic activity should involve implementation specifics of circular economy and eco-efficient technologies to keep up with the times. It is important that Ukraine does not drop out of this process, as there is currently no systemic strategic vision for the simultaneous development of the circular economy model of post-war Ukraine and mechanisms for regulating environmental risks.

The environmental insurance deserves special attention among the existing mechanisms for regulating risks in the circular economy. The definition of this concept is set as a system of relations arising in the process of production activities to prevent environmental damage and to provide its compensation in case of accidental pollution (Marych, 2021). The main goal is to create new

effective financial mechanisms to compensate for damage caused to the environment and to promote environmental modernization of enterprises that are potential polluters (Kryvoruchkina, 2021).

The introduction of this type of tools is a standard world practice. In the European Union, the environmental risk insurance is under regulation by Directive of the European Parliament and of the Council “On environmental liability with regard to the prevention and remedying of environmental damage” (2004). The key provisions of the document define the legal framework of the mechanism for preventing or eliminating the consequences of environmental damage, resulting in is the restoration of the natural environment to its original state. In this case, “environmental damage” means damage to biological species, water resources or soil. Despite some generality of the legislative initiative and the need to implement it to the realities of post-war rebuilding, certain points are worthy of detailed consideration and application in the process of large-scale implementation of the environmental insurance system in Ukraine. Among them are the application of coefficients to increase or decrease insurance fees and a differentiated approach depending on a number of factors (implementation of preventive measures, the history of negative environmental impact cases).

The United States can be a benchmark country in the field of environmental insurance, where the latter is highly regulated, effective and enjoying enormous government support. Only the so-called “Superfund Program” is worth mentioning, where the legislation regulates the financing flows of the environmental insurance fund. The lion’s share was set to revenues from the special enterprise tax. Similar “compensation funds” operate under similar legal base in other progressive countries such as France and Finland in successful and productive manner. Many countries adopted an alternative to compulsory environmental insurance, which is financial and bank guarantees that potentially environmentally hazardous enterprises must obtain (Sweden, Austria, and Belgium). This involves receiving permits and licenses for certain economic activities only under appropriate guarantees. Thus, environmental insurance is an influential financial mechanism in Western countries because it assumes the functions of regulating a set of problems that

directly affect the level of business safety, liability to third parties and deal with issues of environmental protection (Korol, 2022; Kneysler *et al.* 2021).

The successful experience of certain countries cannot have unconditional comparison with the situation in Ukraine due to different economic, political and social features. National environmental insurance system has long been in the shadows without sufficient motivation for effective implementation (Protsenko, 2012; Vasylichenko, 2003).

Shortly before the outbreak of military activities on the territory of the state, the Cabinet of Ministers of Ukraine approved the Draft Law “On environmental insurance” (2021), devised to create a system of effective mechanisms for regulating the risks of environmental damage. The field of legislative activity is new and little used in our country, causing a number of generalizations and inaccuracies requiring revision and adaptation to the new realities of the war and post-war periods. The draft law requires mandatory insurance only for high-risk enterprises with the emphasis on voluntary initiative. This is the first significant disadvantage. The Environmental Insurance Bureau initiative also requires detailed approach. After all, the realities of market economic relations make their own significant adjustments, which could be even radical given the complexity of the post-war conditions. In addition, it would be extremely imprudent to rely on Ukraine’s own capacities in the conditions of post-war recovery, so it is still necessary to assign a significant role to the participation of international partners in the regenerative processes and the latest innovations in the Ukrainian economy after the war. Taking the developed Draft Law “On environmental insurance” (2021) as a basis, it is worth continuing the detailed vector development of the actual mechanisms and conditions for the successful implementation of the environmental risk insurance system in Ukraine.

These aspects echo the basic principles of the circular economy as closely as possible that gives a second wind to the linear economies in the leading countries of the world, exhausted by poorly controlled processes of endless resource consumption (Martins, 2016). The opportunities for reuse and safe recycling of resources, localization of resource consumption and the growth of public consciousness environment is a fundamentally new

and extremely effective solution for the economy of Ukraine, which is reborn and will definitely receive a new powerful impetus for renewal after the end of the exhausting military operations. More than ever, there will be the need in the experience of those who have already successfully overcome this path and coped with certain difficulties that will certainly arise during the process. The difficulties come in numbers due to a huge amount of waste destruction resulted from military activities and the threat of environmental local disasters in the battlefield. The primary task is energy efficiency and functioning of an effective environmental control system. Therefore, any managerial and legislative decisions in the field of environmental protection today should impose on generally accepted norms of international law. However, at the same time they should use their own organizational and economic scenario adapted to the realities of the war and post-war periods with the involvement of expert and advisory support of specialized international institutions. Only this way it will be fully possible to implement the generally accepted values of the “green” economy, which are conscious consumption, ecology and efficiency, into the national economic system. Multiple use of products in combination with effective risk insurance should provide the basic guidelines in the post-war economic rebuilding at all levels. In addition, environmental insurance should become not only an extra coverage of the costs of environmental restoration but also an effective tool for making a profit while reducing the burden on the environment.

The irrelevance of the existing approach to risk insurance in Ukraine becomes obvious under conditions of post-war economic crisis and cost cutting. Our goal should be not only the introduction of material compensation mechanism for environmental damage but also the creation of effective control system over the activities of environmentally hazardous facilities, investment to enterprises where “green” technologies are effectively used as well as environmental regeneration and mitigation of consequences to safe levels.

As noted by S. Chen *et al.* (2022), the environmental risk insurance will become real and effective only in a multilevel approach that will cover all the circumstances of pollution and the use of effective

financial mechanisms. Environmental insurance should become one of the priority levers of risk management in the circular economy model (European Commission, 2020), the principles of which are actively promoted for implementation in the national economic space. M.V. Ruda *et al.* (2021) are convinced that the economy built on conscious consumption and effective system of responsibility can be balanced and environmentally efficient. Only the equal involvement of environmental, economic and legal interests can make the expected results achievable. Thus, the previously stated strategic guidelines for the development of environmental insurance in Ukraine require special adjustment with account of military risks and consequences. A precondition for the successful implementation of environmental insurance in the system of post-war reconstruction of Ukrainian regions is the creation of appropriate regulatory and legal conditions. After all, there are no functional methods of risk and damage assessment today and there is no unified national policy in this field and no system of effective incentives available. Moreover, only a very small minority of insurance companies are engaged in environmental insurance. In order to achieve a Utopian balance between the principle of full compensation for environmental damage and guaranteeing the financial stability of insurance providers, it is necessary to develop a scientifically based approach, which clearly defines the following parameters of environmental insurance as the sum insured as well as insurance rate and insurance fee (Shokha, 2019).

The best option in the current fragmented development of the insurance market may be an effective combination of environmental insurance mechanisms and financial guarantees. At the same time, innovative debt financial instruments should be included (e.g., accident and catastrophe bonds), which provide a high level of protection and the possibility of transferring risks to financial markets. Large-scale risks should have appropriate insurance coverage. The authors Y. Geng *et al.* (2019) insist on it. The scientists somewhat idealize the globalization process of the circular economy but they offer the directions of development that can be regarded as decisive. By analysing the world experience in the studied field, we should note that in addition to the general factors of determining the cost of insurance

coverage (expected losses, probability of occurrence of the event, functional condition of the object, etc.) it is necessary to apply a differentiated approach to the probable negative impact in three possible directions: damage caused to water resources; damage caused to land resources; damage caused to bio resources.

After all, the process of mitigating the negative consequences for each of the above directions requires different amounts of resources, primarily financial instruments. Accordingly, the parameters of environmental insurance should undergo differentiation by a set of factors.

It is also worth noting to the fact that the cumulative experience of European countries in the study field proves effectiveness of combining environmental insurance and certification of enterprises according to ISO 14001 or EU Eco-management and Audit Scheme (EMAS). The EMAS system is not mandatory and only defines the framework conditions for voluntary participation in it based on economic factors. That means it is not a compulsory legal but a purely market instrument. This approach deserves attention from macroeconomic point of view (Phelan and Taplin, 2011). At the same time, individual freedom of decision-making is preserved and innovative environmental management is encouraged rather than its passive form as a supplement to the mechanism of legislative regulation. The circular economy model and environmental certification both share similar concepts: maximum reduction of emissions, efficient waste treatment, minimization of risks to the environment, implementation of environmentally efficient technologies and resource preservation (Velenturf and Purnell, 2021). Thus, the system of implementation of environmental insurance, circular economic model and environmental certification are reduced to a common denominator, a single orientation towards the merger of financial, environmental and economic systems based on a functional modern regulatory framework. M. Brogi *et al.* (2022) offer an entirely new alternative approach to the issue of environmental insurance from the point of view of insurance providers, insisting on the inseparable unity of the three main components of risk insurance (environment, social responsibility and governance) with the financial capacity and characteristics of insurance

companies. This point of view requires proper attention because it embodies the main idea of combining environmental and economic efficiency in the process of establishing a circular economy as a dominant phenomenon in economic activity.

## CONCLUSION

The framework of this study has set the prediction for effectiveness of the introduction of mandatory environmental insurance in the process of “green” post-war rebuilding of the regions of Ukraine in synergy with the basic principles of the circular economy and the European Green Deal strategy and with account of the specifics determining post-war recovery of Ukraine. Only a comprehensive multilevel approach provides opportunity to determine the strategic guidelines for environmental insurance in Ukraine in the context of “green” post-war reconstruction of the country’s regions in harmonious unity with invariable principles of sustainable development and circular economic model. The post-war period in Ukraine expects combining environmental, economic, political and social problems. By synchronizing the development vector with Europe and the United States, our country will use a unique opportunity to reformat economic activity in a new way and to reach a new level of environmental and economic efficiency with the comprehensive support of foreign partners in the period of post-war recovery, despite the continuous negative impact of the war.

It is important that effective and fast project management and implementation processes will be in demand in the context of post-war reconstruction. Taking the most from strong international support should accelerate the creation of conditions for attracting investments, experience and implementation of advanced reforms. On a struggle for life and freedom, we need to be ready for the stage of effective and rapid rebuilding of “greener”, stronger and more sustainable Ukraine. After the end of the Russian-Ukrainian war, it is necessary to further study in detail the mechanisms and tools for implementing an effective system of environmental insurance in the conditions of post-war “green” restoration of Ukraine.

## REFERENCES

- Arnold, C. 2012. Green insurance and finance, pp. 241-258. *In Ethical marketing and the new consumer*. John Wiley & Sons, Hoboken, New Jersey, USA.
- Broggi, M., Cappiello, A., Lagasio, V. and Santoboni, F. 2022. Determinants of insurance companies’ environmental, social and governance awareness. *Corporate Social Responsibility and Environmental Management*, **29**(5): 1357-1369.
- Chen, S., Ding, X. and Lou, P. 2022. New evidence of moral hazard: Environmental liability insurance and firms’ environmental performance. *J. Risk and Insurance*, **89**(3): 581-613.
- Directive of the European Parliament and of the Council “On environmental liability with regard to the prevention and remedying of environmental damage”. 2004. Available in <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32004L0035> (Last Accessed on 25<sup>th</sup> September, 2022).
- Draft Law “On environmental insurance”. 2021. Available in [http://w1.c1.rada.gov.ua/pls/zweb2/webproc4\\_1?pf3511=72713](http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=72713) (Last Accessed on 25<sup>th</sup> September, 2022).
- European Commission. 2020. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A new Circular Economy Action Plan for a cleaner and more competitive Europe. Available in [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:98:FIN&WT.mc\\_id=Twitter](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:98:FIN&WT.mc_id=Twitter) (Last Accessed on 25<sup>th</sup> September, 2022).
- Geng, Y., Sarkis, J. and Bleischwitz, R. 2019. How to globalize the circular economy. *Nature*, **565**: 153-155.
- Kneysler, O., Spasiv, N. and Korol, S. 2021. Novelization trends in the development of insurance companies in Ukraine. *The World of Finance*, **2**(67): 106-117.
- Korol, S. 2022. Environmental insurance: current challenges and strategic development guidelines. *Econ. Analy.*, **32**(2): 118-124.
- Kozmenko, S. 2012. New vectors of development of the insurance market of Ukraine, pp. 315. Universytetska Knyha, Sumy, Ukraine.
- Kryvoruchkina, O. 2021. Environmental insurance in Ukraine: prospects and problems of implementation. ECOBUSINESS: Ecology of the Enterprise. Available in <https://ecolog-ua.com/articles/ekologichne-strahuvannya-v-ukrayini-perspektyvy-ta-problemy-vprovadzhennya> (Last Accessed on 25<sup>th</sup> September, 2022).
- Martins, N.O. 2016. Ecosystems, strong sustainability and the classical circular economy. *Ecological Econ.*, **129**: 32-39.
- Marych, H. 2021. Environmental insurance as a tool of environmental risk management. *Legal Scientific Electronic J.*, **9**: 119-121.

- Phelan, L. and Taplin, R. 2011. Ecological viability or liability? Insurance System Responses to Climate Risk. *Environmental Policy and Governance*, **21**(2): 112-130.
- Protsenko, O. 2010. Environmental insurance: the Ukrainian aspect. *Annals of the Faculty of the Legal and Economic Sciences of the John Paul II Catholic University of Lublin*, **5-6**(2): 39-45.
- Ruda, M.V., Yaremchuk, T.S. and Bortnikova, M.G. 2021. Circular economy in Ukraine: adaptation of European experience. *Management and Entrepreneurship in Ukraine: Stages of Formation and Problems of Development*, **3**(1): 212-222.
- Shevchuk, V., Satalkin, Yu. and Navrotskyy, V. 2000. Environmental audit, pp. 344. Vyshcha Shkola, Kyiv, Ukraine.
- Shokha, T. 2019. Legal aspects of environmental insurance in Ukraine, pp. 236. Pravova Yednist, Kyiv, Ukraine.
- Vasylchenko, S. 2003. Problems of forming a legislative model of environmental insurance in Ukraine. *Legal J.*, **12**: 16-22.
- Velenturf, A.P.M. and Purnell, P. 2021. Principles for a sustainable circular economy. *Sustainable Production and Consumption*, **27**: 1437-1457.

