ECOLOGY

Varyvoda Ye.A.

Strengthening emergencies governance system through environmental assessment implementation (case study of Ukraine)

Abstract. The legislative background and methodological approaches for ecological safety provision with application of environmental assessment procedure in the field of governance of emergencies are studied. The directions related to the efficiency increasing of environmental assessment implementation to the mechanism of state governance in civil protection are determined.

Keywords: environmental assessment, emergencies, ecological safety, state governance, civil protection.

Introduction. Character of the newest challenges and threats to the safety of the environment associated with the synergistic effects of natural, technological and environmental emergencies (EE); by the increase of probability of origin of one type of dangers, that stipulates the acceleration of display other; by the far of sources of technogenic risk. The issue of preventing and mitigating the environmental impacts of emergencies still exists in connection not only with increasing their number, but also an increase the extent of destruction of natural geosystems, transboundary nature of the impact, increasing social and economic losses. In practice, the main reasons for 67% of man-made emergencies, registered in database systems, reporting on major accidents (Major Accidents Reporting System – MARS) were low productive inefficiency and safety management systems, environmental security [6].

Numerous emergencies, that inflict all greater harm to the environment through the catastrophic aging of capital assets and sickly development of the systems of reacting, defense and warning of natural and technogenic emergencies [16]. Also the extent of the consequences of the negative impact of emergencies on the ecological state of environmental components proves extremely inefficient use of preventive measures. Therefore, at present, there is a problem improving the management mechanism of ecological security in emergency situations, which requires the state to implement a unified system of continuous integration of environmental factors in the prevention and elimination of emergency situations.

Basic principles for solving environmental problems in emergency situations at the international level were identified Stockholm Declaration of the year 1972 [2]. Provided for therein principles for determining and prevention of damage to the environment, a mutual not causing environmental damage have been further developed and confirmed in the international legal practice with regard to environmental protection.

At present, it is necessary to elect among modern arsenal of scientific and practical tools to ensure environmental safety of that activity to assess compliance with environmental requirements at a particular stage of its implementation, starting from the stage of prevention of emergency situations and finishing the elimination phase of its direct and adverse effects. As such a tool may be the environmental assessment (EA), which is defined as a process of systematic analysis and evaluation of environmental impacts of the planned activities, stakeholder consultation and consideration of the results of this analysis and advice in the planning, design, approval and implementation of this activity [17]. The analogue of the international system of environmental assessment in the Ukraine is a strategic environmental assessment, ecological expertise and evaluation of environmental impact (OVOS). These procedures aimed at preventing negative consequences for the environment and to establish whether planned or ongoing activities and norms of legislation on environmental protection, rational use and reproduction of natural resources and environmental safety.

The relevance of the research question of the place of environmental assessment procedures in the system of state emergency management is not only of scientific interest but also of practical importance. Since the Ukraine gained huge positive experience of environmental assessment, evaluation of environmental impact on activities that are highly hazardous, but the practice of these procedures in the field of prevention and liquidation of emergency situations is limited.

Recent research and publications analysis. The scientific and theoretical background of the article is based on scientific papers by B. Danlyshyn, S. Doroguntsov, O. Ralychuk, G. Rudko, A. Fedorishcheva, Ye. Khlobystov, V. Shevchuk devoted to the questions of legal, policy and institutional framework of ecological safety provision.

Elaboration of theoretical basis of environmental policy-making process for ecological safety insurance in accordance to sustainable development goals is studied in scientific works by V. Andreiysiev, N. Andruievich, G. Baluk, A. Hetman, N. Kobetska, V. Lozanskiy, Y. Shemshuchenko, M. Shulga. Methodological and practical aspects of environmental assessment process are examined in researches by I. Abramov, Y. Adamenko, A. Chadwick, A. Cherp, J. Glasson, N. Lee, B. Sadler, R. Therivel and others.

Despite the importance of the research and their significant contribution to the solution of environmental, economic and legal aspects of the regulation of emergencies, today is the issue of underdeveloped legal and scientific methodology for assessment of environmental impacts at different stages of the life cycle of an emergency.
**Paper objective.** The aim of the paper is to provide an overview of the existing regulatory and methodological arrangements for environmental assessment implementation in the field of state governance of civil protection.

**Materials and methods.** This article looks at the legal, regulatory and methodological framework developed for environmental assessment implementation for prevention and mitigation of environmental impact of emergencies. It concentrates on determining of the existing prerequisites for strengthening of the state governance system of emergencies by means of EA. The laws, regulations and environmental assessment procedures were reviewed along with the actual practice in applying of these. Also proposed changes in the above were also considered.

**Results and discussion.**

Today in the Ukraine developed a conceptual approach and active legislative process in preventive detection of environmental hazards, assessing potential risks and mitigate the destructive impact on prevention and response results emergencies. In order to prevent emergencies during the year 2012 implemented measures to improve the regulatory support of central and local executive bodies, covering all areas of activity to ensure safe human existence. On the one hand this is due to the integration of independent Ukraine in the European community, and on the other – using the development of the Ukrainian scientists in the assessment of anthropogenic impact on the environment [1; 15].

However, the current system of governance in the field of civil protection has certain problems associated with the place and role of environmental regulations and/or regulatory acts in the legal system for emergency situations, weak interagency integration authorities to ensure the implementation of state policy in the field of technogenic and ecological safety; limited conditions for practical implementation of the activities of analysis, evaluation and prediction of environmental impacts of emergencies, the weakness of the existing economic incentives measures to prevent environmental impacts and to eliminate the onset emergencies, the imperfection of the legal principles of management and control for ensuring environmental safety in the prevention of emergency situations.

To date, the provisions of the regulation on the implementation of environmental assessment procedures in the field of prevention and emergency response by using different hierarchy, form, manner and subject to regulation, sectoral focus of legislative and normative legal acts.

The provisions relating to the general principles, state regulation, conditions, organization, powers and procedure in the field of environmental assessment application including emergencies’ prevention and liquidation of consequences are determined in the Constitution of Ukraine, the Code of civil protection of Ukraine, the Laws of Ukraine “On protecting the natural environment”, “On ecological expertise”, “On the fundamental principles (strategy) of Ukraine’s state environmental policy for the period until 2020”, “On the objects of increased dangerous”, “On zone of environmental emergency situation”, “On regulation of city-planning Activity” [4-5; 8-13].

Examination of the mentioned above legal acts allow to conclude that despite of wide legal regulations for environmental assessment there are some crucial gaps in the field of its implementation in the practice of prevention and liquidation of emergencies’ consequences. It is necessary to undertake particular measures for laws’ enforcement assisting e.g. studying, analysis and generalization of international and national practice of application of the provisions of the legislation on environmental assessment to the emergencies governance; scientific justification, elaboration and acceptance of the unified guidelines for environmental assessment following emergencies; elaboration and validation of conforming regulations providing cross-cutting integration of environmental assessment to the field of emergencies’ governance; establishment of the complex of administrative, regulatory, organizational procuring for promotion of environmental assessment application as an emergency assessment tool to enable competent authorities prevent the actual or potential adverse environmental impact.

So, to the present there isn’t necessity to form a new branch of law concerning to environmental assessment since legal norms of EA adequately and comprehensively represented in environmental legislation and are dominant in the field of ecological safety of environment. But state mechanism of its implementation for prevention and elimination of emergencies consequences need to be enhanced and environmental assessment certainly has a crucial role in sustainable development policy corresponding to the internationally recognized standards of ecological safety.

Existing research and practice approaches to assessing the impact on the environment (strategic environmental assessment, ecological expertise, assessment of environmental impact) based on the ideology of prevention of negative impact on the stage of planning and design business. They act as a preventive consideration of environmental factors and prevention of potential environmental impacts of planned or ongoing activities in the absence of threats caused normal functioning of natural and man-made ecosystems. Today in the Ukraine there is no normative document regulating the procedure for the assessment of environmental impacts on emergency. However, each of the above approaches can be implemented in various stages of regulation emergencies. Consider introducing prerequisites for the strategic environmental assessment, evaluation of environmental impact and ecological expertise as a tool integrating environmental factors emergencies.

The key idea of the strategic environmental assessment (SEA) is to assess the potential negative technogenic environmental consequences of planned actions within a certain strategic documents (laws, policies, plans, programs) in order to prevent environmental degradation.

At the regulatory level, strategic environmental assessment procedure is governed by the Protocol on strategic environmental assessment [14], developed in the framework of the provisions of the «Convention on the assessment of the environmental impact in a transboundary context», which is a testament to the direction of strategic environmental assessment to address environmental issues at the international level.

Based on the research topic, the scope of the strategic environmental assessment subject, such as the “State Environmental Program in the emergency response to the military unit A0829 (Lozovaja town of the Kharkov region) in the years 2011-2013” [3], but unfortunately
Methodology for strategic environmental assessment has not been implemented for of the state program.

To enable effective use of strategic environmental assessment methodology at the level of strategic actions for the Prevention of adverse effects of emergencies on the environment recommended further detailed development of scientific and practical foundations of national strategic environmental assessment methodology, analysis of international practice implementing strategic environmental assessment in the regulatory system emergencies, testing existing approaches to strategic environmental assessment in the management of technological-ecological safety in specific case studies.

Potential of estimation of influence is on an environment (OVOS) in the Ukraine is the maximum possible capacity of environmental protection and environmental concerns in the implementation of design solutions, which certainly is very important to comply with man-made environmental safety. The content, principles and procedures for assessing the impact on the environment are regulated by state regulatory document DBN A.2.2.-1-2003 «Structure and Content of assessment of the impacts on the environment (OVOS) in the design and construction of enterprises, buildings and structures» [7].

In the absence of a separate regulatory document on the development of impact assessment of environmental emergencies practice this type of activity, despite its urgent need, is very limited. Therefore, an important task is the development of the instrument and guidelines on the composition and content of the impacts of emergencies on the environment, taking into account the different stages of the life cycle of an emergency.

Appropriate guidelines should include: purpose, objectives, procedure implementation and training materials, a framework for the initial data required for impact assessment of environmental emergencies, taking into account the issue of public interest in carrying out this procedure, the issue of transboundary impacts of emergencies, general methodological principles of the reporting materials and so on.

For example, to assess the environmental impact at the stage of emergency response should be the assessment of acceptability and feasibility in terms of environmental safety package of measures, which include search and rescue and other urgent works carried out in the event of emergency situations of technogenic and natural character, and aimed at the termination of the hazards on the environment, saving lives and health of people, as well as location of the zones of emergency situations of technogenic and natural character. But the question remains open how to correctly assess the potential and real impact on the environment at the onset and implementation stages of the emergency.

One of the key tools to maintain the ecological security in terms of activities to prevent and eliminate the negative effects of the emergencies are environmental expertise, which is defined as a form of research and practice-based intersectoral ecological research, analysis and evaluation of the preparatory projects, projects and other materials or objects, implementation and which may have an adverse effect or impact on the environment, and aims to prepare Statement of planned or ongoing activities and norms of legislation on environmental protection, rational use and reproduction of natural resources and environmental safety.

According to the Law of the Ukraine «On ecological expertise» [8] objects of ecological expertise are draft laws and other legal acts, records from the introduction of new technology, techniques, materials, substances, products, genetically modified organisms that might lead to a breach of environmental regulations negative impact on the environment.

Environmental impact assessment may be subject to environmental situations that have developed in some areas and regions, as well as existing facilities and systems that have a significant negative impact on the environment. Thus, in terms of current legislation, namely environmental impact assessment procedure should assess impacts of emergencies on the environment.

Today in the Ukraine there is a legal and regulatory framework and specific methodology for environmental impact assessment technogenic emergency situations, but the practice of this type of activity is very limited. This is largely due to the fact that the Ukrainian system of environmental assessment is almost no differentiated approach to objects of different complexity and different scales of environmental impact. List of objects rather significant environmental impact assessment is quite impressive and includes a variety of projects – from project plans, programs and projects to the laws of any planned economic activity, environmental situations, a priori creates methodological problems for the implementation of quality procedures for environmental impact assessment.

The real potential of these procedures is the ability to provide the highest possible environmental, environmental interests in the implementation of design solutions, which certainly is important to comply with the requirements and standards of technogenic and ecological security. However, the greatest efficiency of their application will be exactly at the design stage, so there is a need to develop its own methodology for rapid environmental assessment, taking into account the phase of emergencies, especially the national system of control in emergency situations, the specificity of the rescue operations, the existing legal background.

Conclusions of the research. Based on the above material in the Ukraine there is regulatory and a methodological ground that legislatively determines the need for impact assessment procedure emergencies on the environment. But despite the legally established and practical evidence of the necessity of this type of activity, there was no single methodological approach to preventing and mitigating the environmental impacts of the emergency. As a result, there are significant differences in the manner of the analysis and identification of potential sources of environmental hazards in case of emergencies, in identifying the potential hazardous effects and areas of impact on the environment, modeling and scale of negative impacts, forecast changes in the environment according to the list of identified impacts, risk of cumulative environmental damage, the development and adoption of legal acts and administrative decisions on measures to ensure the prevention or restriction of hazardous actions needed to comply with environmental safety. This significantly reduces the effectiveness of combating environmental emergency situations and the negative impact on the pro-
tection of population and territories from emergency situations.

The challenge is to create a single regulatory document, such as, “Assessment of impacts of emergencies on the environment”, which will be the basis for the implementation of practices to prevent and eliminate violations of the elements of the environment for the onset emergencies.

Analyzing the difficulties that hinder the implementation of the task are the following: limited environmental priorities in the practice of emergency situations, the complexity of relationships and poor predictability in terms of adverse events in the system “nature – society – technosphere”, limited comprehensive research on impacts of environmental emergencies, limited proper coordination and coherence between institutional agencies responsible for the safety of the environment, the lack of uniform definitions and standardized methods of environmental components due to pollution emergencies, lack of uniform criteria for assessing the state of the environment before the emergency situations, during and after emergencies. But there are certain achievements, which include: the availability of legal acts that at the legislative level determine the need for methodological apparatus of the impacts of emergencies, experience of practical implementation evaluation of environmental impact and environmental assessment of high-risk and potentially dangerous objects, active target international support activities to prevent environmental impacts of emergencies.

After analyzing the achievements and challenges facing towards environmental safety, outline the range of issues that require further action – the improvement of the legal framework of cooperation and responsibility in implementing environmental assessment emergencies between key institutions concerned, the development and approval of the methodological apparatus implementation of the impacts of emergencies on the environment, study best practices and case studies handed kind of research and practical activities, enhanced international cooperation, increase the range of research in the field of the impacts of emergencies on the environment and others.

A number of outstanding issues on the assessment and restoration of environmental quality components that occur before, during and after emergency situations require the introduction of a clear mechanism for state governance of the environmental safety of the system of civil protection.

REFERENCES (TRANSLATED AND TRANSLITERATED)


2. Андрусевич А. Справочник действующих международных договоров Украины в сфере охраны окружающей среды / А. Андрусевич, Н. Андрусевич, З. Козак. – Львов, 2009. – 203 с.


Вариюка Е.А. Усовершенствование системы управления чрезвычайными ситуациями посредством применения экологической оценки (эвристико-пример Украины) Аннотация. В статье рассмотрены нормативно-правовые и методологические предпосылки применения экологической оценки для усовершенствования государственной системы управления чрезвычайными ситуациями (ЧС). В Украине на законодательном уровне определена необходимость имплементации экологической оценки в сфере предупреждения и ликвидации последствий ЧС, однако практика данного вида деятельности ограничена. Существующие методологические подходы экологической оценки (стратегическая экологическая оценка, оценка в пренебрежении ЧС,ОВОС и междугранничных последствий чрезвычайных ситуаций: сравнительный анализ украинской и международной практики) не всегда позволяют принимать эффективные решения в условиях чрезвычайных ситуаций. В связи с этим организация экологической оценки как инструмента управления ЧС является актуальной задачей.

Ключевые слова: экологическая оценка, чрезвычайные ситуации, экологическая безопасность, государственное управление.