



SENGAI FRAMEWORK FOR DISASTER RISK REDUCTION AS A TOOL FOR SUSTAINABLE DEVELOPMENT

PARTICULARITIES OF IMPLEMENTATION
IN PEACETIME AND WARTIME

ANALYTICAL REPORT

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Charitable Fund "Right to Protection"

Project "Reducing Disaster Risk Vulnerability in Ukraine – Phase II"

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This is the fourth report on the implementation of the Sendai Framework for Disaster Risk Reduction prepared by the Charitable Fund "Right to Protection". This document is intended to be used as a tool to help find arguments for stakeholders in the development and adoption of disaster risk reduction strategies at various levels. The Russian Federation's full-scale invasion of Ukraine that started on February 24, 2022 has both necessitated adjustments to the study and strengthened its relevance, raising the issue of the application of the Sendai Framework principles for the post-war reconstruction of the country.

In the preparation of this report, Ukraine's overall ability to cope with disaster risks has been analysed, particularly with regard to the identification of disaster risks. This has to do with the planning of measures for the prevention of such risks and strengthening resilience against them, as well as with the implementation of the Sendai Framework's Priority 4, which stipulates the "Build Back Better" principle.

The practical part of the study was completed before the full-scale invasion. It was conducted in Donetsk and Luhansk oblasts, where a military conflict has been continuing since 2014. The local communities of these territories were at constant risk of natural and man-made disasters, destruction of critical infrastructure, housing stock, industrial facilities, etc. The results developed in the course of work with local communities of Donetsk and Luhansk oblasts now gain more practical relevance for other regions of Ukraine affected by the hostilities. This study provides a foundation for the ongoing nationwide discussion concerning the ways to rebuild the country using the existing experience of the "Build Back Better" approach.

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Views and opinions expressed are however those of the authors only and do not necessarily reflect those of the European Union or the European Commission's Civil Protection and Humanitarian Aid department. Neither the European Union nor the granting authority can be held responsible for them.

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ABBREVIATIONS

RBA	River Basin Administration
VRU	Verkhovna Rada of Ukraine
CMA	Civil-military administration
SEI	State Environmental Inspectorate of Ukraine
StateGeoCadastre	State Service of Ukraine for Geodesy, Cartography and Cadastre
SSS	State Statistics Service of Ukraine
SSA	State Space Agency of Ukraine
SES	State Emergency Service of Ukraine
USSCP	Unified State System of Civil Protection
CM	Cabinet of Ministers of Ukraine
CCPU	Code of Civil Protection of Ukraine
MAPF	Ministry of Agrarian Policy and Food of Ukraine
MEPNR	Ministry of Environmental Protection and Natural Resources of Ukraine
MEDTA	Ministry of Economic Development, Trade and Agriculture of Ukraine
MCTD	Ministry for Communities and Territories Development of Ukraine
MJ	Ministry of Justice of Ukraine
NSDI	National Spatial Data Infrastructure
LR	Legal regulation
ES	Emergency situation ¹
EIA	Environmental impact assessment
SEA	Strategic environmental assessment
SMS	Safety management system
SFDRR	Sendai Framework for Disaster Risk Reduction
LG	Local government
AI	Artificial intelligence

¹ The matters of terminology have been extensively analysed and explicated in analytical reports named "On the State of Ukrainian Legislative Framework Regulating Civil Protection in the Context of Priorities of the Sendai Framework for Disaster Risk Reduction" and "On the State of Ukrainian Legislative Framework Regulating Environmental and Industrial Risks in the Context of Priorities of the Sendai Framework for Disaster Risk Reduction". In this report, the terms "emergency" and "disaster" have the meaning defined in the Sendai Framework, i.e., a serious disruption of the functioning of a community or territory of any level and scale due to hazardous events that result in consequences, vulnerabilities and ability, and cause loss or damage at the level of human, material, economic and environmental resources and cover all concepts.

SUMMARY

From the very beginning, the central research question of this report was, “How are the priorities of disaster risk management defined in the Sendai Framework taken into account in the national, regional and local strategies developed by public authorities?”. This question remained relevant after February 2022, though it has been slightly paraphrased through the lens of recovery, i. e., “How should communities record the consequences of hostilities and take them into account when planning the recovery processes? How to build back better?” It is clear that answering these questions requires analysing the processes of public administration and management in the field of civil protection, its regulatory and strategic basis, as well as reflecting on the improvements that need to be made for ensuring sustainable development and sustainability of the entire system and its elements.

Therefore, the main goal of this analytical report is to identify the shortcomings of the disaster risk management system in Ukraine, suggest solutions and outline ways to advocate such solutions.

The objectives of this report are:

- to compare national, regional and local strategies in terms of safeguarding of the security and environmental interests of local communities;
- to identify priority steps for the disaster risks prevention to be taken by communities;
- to investigate a number of related issues, particularly to find out:
 - a) whether communities are able to participate in the development and discussion of national strategies to lobby their own interests;
 - b) whether communities have sufficient authority to achieve sustainability;
 - c) whether sufficient tools for disaster risk management are available to communities;
 - d) whether sufficient financial mechanisms to implement security practices at the community level are established and used.

KEY RECOMMENDATIONS BASED ON THE ACHIEVED RESULTS

To improve understanding of disaster risk:

- a national register of risks ensuring their processing (analysis) must be created and maintained;
- it is important to develop methodological basis for the assessment of disaster risks at the national, regional and local levels, as well as ensure relevant capabilities allowing to prepare, make and implement strategic decisions;
- authorized entities should be identified to coordinate actions for the assessment of local disaster risks as well as for the creation and maintenance of risk registers at the local or infrastructural level.

To improve disaster risk governance:

- the scope of the concept of “persons affected by a man-made or natural disaster” defined in Article 2 of the Code of Civil Protection of Ukraine must be broadened;
- civil protection standards, especially those having to do with engineering and technical support, have to be integrated into the practice of applying the provisions of laws on strategic environmental assessment (SEA) and environmental impact assessment (EIA);
- practical cooperation between StateGeo-Cadastre, SES, RBAs and local authorities on the zoning of territories vulnerable to disasters should be strengthened, in particular, by means of development of geo-spatial information systems;
- an effective environmental monitoring system that will include monitoring of disaster risks and consequences has to be developed and maintained.

To encourage investment in disaster risk management:

- it is important to develop public-private partnership at the local level to facilitate the involvement of businesses in the field of risk management, and establish special funds and programs for financing risk-oriented projects;
- inter-municipal cooperation in the field of disaster risk reduction must be further strengthened and developed (particularly, in the field of community safety, civil protection, environmental matters, etc.);
- a separate article has to be included in the Budget Code of Ukraine to allow authorities to terminate projects after financing disaster risk assessment if it is found that the risks outweigh the benefits. Such expenses must not be qualified as misuse of funds in the governance practice;
- the Civil Protection Code should be amended to authorize civil protection centres to provide paid services to business entities that bear significant disaster risks.

To enhance disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction:

- the experience of emergency situations (ES) has to be considered in plans for the development of territories based on the “Build Back Better” principle. It is recommended to maintain a database of ESs and establish an analytical centre to carry out the causality assessment of the occurrence of risks;
- SES units must be involved in the EIA and SEA processes;
- new technological and scientific solutions have to be developed in order to find the best available engineering and technological measures of disaster prevention. This includes both the use of existing legal norms and introduction of new ones;
- the provisions of the Sendai Framework should be applied to procedures for the development, implementation and monitoring of execution of state planning documents;
- it is important to develop a practice of SEA and methodologies for qualitative implementation of the consulting and public discussion stages with the involvement of all knowledge about disaster risks available;
- the SES has to be one of such consulting bodies involved in the identification and assessment of risks, as well as in the search for criteria to be used in the evaluation of “Build Back Better” projects.

INTRODUCTION

The key need of every person is safety; this includes a safe environment for life and health as well as social protection. Since the official proclamation of the UN Declaration on the Human Environment in 1972,² humankind has been continuously looking for the best solutions for future development that would guarantee the safety of people in the environment and enable its protection from the negative consequences of human activities. Principle 1 of the Rio Declaration on Environment and Development³ states: “Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature”. Ukraine’s striving to acquire the EU membership also requires Ukraine to clearly understand the moral obligation to reduce disaster risks in order to better protect people when planning and building service system facilities to combat natural disasters.⁴ In 2022, Ukraine was planning to continue its quest for the most efficient sustainable solutions in its own development, particularly through improving the safety tools for sustainable development. The introduction of local and national strategies for disaster risk reduction is of such tools. However, on February 24, 2022, the life of the country drastically changed due to the declaration of

martial law, which took effect starting from 5:30 a.m. on February 24, 2022.⁵ Most experts tend to believe that hostilities are going to last for several years.^{6,7} However, the key issue raised by the war is that of the time needed to assess a situation and make a decision. While in peacetime there is enough time to do this, wartime calls for immediate reaction, and thus for ready scenarios of action.

For example, experts of the Siverskyi Donets RBA estimated that in the case of emergency at tailings storage facilities, pollutants will end up in the drinking water intake of Popasna District Water Supply Company public enterprise within 3 to 8.5 days.⁸ Therefore, it would be fitting to have a relevant action plan in advance. This means knowing which pollutants from the dams will get into the drinking water intake and in what amount, as well as having a stock of products and reagents for cleaning drinking water and eliminating accidents to protect people and the environment. As hostilities in the Donbas have shown, communities must have means for automatic measurement of pollution levels, business entities have to be prepared to respond to emergencies on their facilities, and civilians must be ready for potential accidents.

² Declaration of the United Nations Conference on the Human Environment, https://zakon.rada.gov.ua/laws/show/995_454#Text.

³ The Rio Declaration on Environment and Development, https://zakon.rada.gov.ua/laws/show/995_455#Text.

⁴ Opinion of the European Committee of the Regions — Action Plan on the Sendai Framework for Disaster Risk Reduction 2015–2030 — A disaster risk-informed approach for all EU policies, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52016AR5035&qid=1658077743154>.

⁵ Decree of the President of Ukraine On General Mobilisation, <https://zakon.rada.gov.ua/laws/show/65/2022#Text>.

⁶ Sharing our expertise and insights on the war on Ukraine, <https://www.kcl.ac.uk/sharing-our-expertise-and-insights-on-the-ukraine-crisis>.

⁷ Preventing a Wider European Conflict, <https://www.cfr.org/report/preventing-wider-european-conflict>.

⁸ State of the Siverskyi Donets Basin and Related Risks under Military Operations. Technical report (OSCE, 2018), <https://www.osce.org/uk/project-coordinator-in-ukraine/419462>.

Risk prevention requires the development of skills for their identification, assessment of their probability and potential consequences, as well as the ability to manage such risks. The challenge of finding sustainable solutions to minimize disaster risks lies in the complexity of matters of environment and human health protection due to the huge number of interrelated issues that cause the risks of natural and man-made disasters.

It is worth noting that during the 8 years of the War in Donbas (2014–2022), Ukraine has acquired certain knowledge and skills needed for understanding risks and taking them into account while planning its development. In particular, a number of reports have been prepared, e.g.:

- State of the Siverskyi Donets Basin and Related Risks under Military Operations. Technical Report,⁹
- Environmental Assessment and Recovery Priorities for Eastern Ukraine,^{10,11}
- The Artery of Eastern Ukraine,¹²
- Environment and Conflict Alert in Ukraine: A first glimpse of the toxic toll of Russia's invasion of Ukraine,¹³

- Review of the Current State of Tailing Storage Facilities in Donetsk and Luhansk Oblasts,¹⁴
- Summary of the Analysis of Water Issues in the Siverskyi Donets River,¹⁵
- Donbas Tailings Storage Facilities,¹⁶
- 5 Years of Fighting in Eastern Ukraine.¹⁷

The Sendai Framework for Disaster Risk Reduction (hereinafter — SFDRR) was adopted at the third UN World Conference on Disaster Risk Reduction in Sendai (Japan), held on March 14–18, 2015.¹⁸ The SFDRR emphasizes the importance of comprehensive interaction between public authorities for maximum prevention of and preparedness for disasters, which necessitates the openness and transparency of governance decisions.

Cooperation, coordination and communication are the three C's that must guide all governance decisions in the field of risk management, regardless of the area of their occurrence and the potentially affected areas. This has become extremely obvious during the war.^{19,20}

⁹ State of the Siverskyi Donets Basin and Related Risks under Military Operations. Technical Report, <https://www.osce.org/files/f/documents/8/a/419462.pdf>.

¹⁰ Environmental Assessment and Recovery Priorities for Eastern Ukraine, https://www.osce.org/files/f/documents/6/3/362581_0.pdf.

¹¹ The implementation of political measures to prevent hostilities in areas where sources of increased environmental danger are located, international monitoring of the situation, as well as carrying out the necessary preventive measures against sources of increased danger were ineffective.

¹² The Artery of Eastern Ukraine, <https://www.osce.org/files/f/documents/f/6/509504.pdf>.

¹³ Environment and Conflict Alert in Ukraine: A first glimpse of the toxic toll of Russia's invasion of Ukraine, <https://paxforpeace.nl/news/overview/environment-and-conflict-alert-ukraine-a-first-glimpse-of-the-toxic-toll-of-russias-invasion-of-ukraine>.

¹⁴ Review of the Current State of Tailing Storage Facilities in Donetsk and Luhansk Oblasts, <https://www.osce.org/files/f/documents/9/9/486259.pdf>.

¹⁵ Summary of the analysis of the problems of the Siverskyi Donets, <https://www.osce.org/files/f/documents/f/6/509504.pdf>.

¹⁶ Donbas Tailings Storage Facilities <https://www.osce.org/files/f/documents/b/b/456847.pdf>.

¹⁷ 5 Years of Fighting, <https://www.osce.org/files/f/documents/b/0/445369.pdf>.

¹⁸ Sendai Framework for Disaster Risk Reduction 2015–2030, <http://www.unisdr.org>.

¹⁹ Sustainable Development of Cities and Communities (CSD 11) and Combatting Climate Change and its Consequences (CSD 13), <https://www.kmu.gov.ua/diyalnist/cili-stalogo-rozvitku-ta-ukrayina>.

²⁰ Theory of State and Law. Academic course: textbook. / [O. V. Zaychuk, A. P. Zaiets, V. S. Zhuravskyi et al.]; Ed.

SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION AND THE UKRAINIAN CONTEXT

The Decree of the President of Ukraine No. 479/2021 of September 27, 2021 put into effect the Decision of the National Security and Defence Council of Ukraine of August 20, 2021 On the Implementation of the National Sustainability System.²¹ The decisions set forth in the Decree cover four priorities of the Sendai Framework:

- 1) understanding of risks (in particular, the complexity of the issue);
- 2) strengthening disaster risk governance to manage disaster risks;
- 3) investing in disaster risk reduction for resilience;
- 4) enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.

Achieving a safe development (sustainability) requires a systematic approach based on the recognition of the fact that many adverse events are interconnected and occur simultaneously at the global, regional, national, sub-national and local levels. These connections are causal in their nature. Professor of the University of California Judea Pearl and mathematician Dan McKenzie were first to study causal inference. It affects people’s daily lives, but also a number of other areas ranging from the

development of new medicines to economy, emergency modelling and climate change.²² Study of causal inference uses the method of Structural Causal Models (SCMs),²³ which allows scientists to model the impacts of certain actions affecting a particular object. For example, numerous forest fires can deteriorate the air condition at the national, regional and local levels, endanger forest resources markets, cause property losses and human casualties. Identifying losses proves that constant financing of disaster prevention measures matters and has to be carried out. The use of such an approach helps develop AIs for public management, particularly in the field of disaster risk management.²⁴

Events in the east of Ukraine, as well as a huge number of worn-out industrial facilities inherited from the Soviet regime, cause internal displacement of people, risks of man-made and natural disasters, as well as drop the living standards of local residents. They also require special skills for managing the risks of disasters and non-standard solutions to restore the economic development of those regions, which creates additional need for innovative solutions.

O. V. Zaychuk, N. M. Onishchenko. — 2nd ed., revised and ammend. K: Yurinkom Inter, 2008, P. 61; Alekseev S. S. Ascent to the Law. Searches and solutions / S. S. Alekseev. Moscow: Norma Publishing House, 2001. — P. 10., https://www.naiu.kiev.ua/files/kafedru/tdp/navch_pos_tdp.pdf.

²¹ Decree of the President of Ukraine No. 479/2021 of September 27, 2021 put into effect the Decision of the National Security and Defence Council of Ukraine of August 20, 2021 On the Introduction of the National Sustainability System, <https://www.president.gov.ua/documents/4792021-40181>.

²² The Mathematics of Causal Inference: with Reflections on Machine Learning, <http://bayes.cs.ucla.edu/home.htm>.

²³ Structural Causal Models, <https://medium.data4sci.com/causal-inference-part-iv-structural-causal-models-df10a83be580>.

²⁴ Artificial Intelligence for Disaster Risk Reduction: Opportunities, challenges, and prospects, <https://public.wmo.int/en/resources/bulletin/artificial-intelligence-disaster-risk-reduction-opportunities-challenges-and>.

The completed decentralization reform poses new challenges for local communities. This report was initially intended to contribute to the development of local communities affected by the events in Eastern Ukraine through a detailed analysis of the possibilities provided by the Sendai Framework and the implementation of its provisions in strategic and policy documents at various levels. Today, its scope can be extended to much larger territories within Ukraine. For more information about the Sendai Framework, see a number of materials prepared by the CF 'Right to Protection'. One of them is named Technical Recommendations for the Reduction of Disaster Risk and Civilian Vulnerability in Eastern Ukraine.²⁵ This document was aimed to support the implementation of the Concept of the Establishment of the State Critical Infrastructure Protection System in Ukraine,²⁶ suggesting the approval of a law on critical infrastructure.²⁷ The detailed description of the terminology related to emergency situations is provided in the analytical report Current State of the Ukrainian Legislation Regulating Civil Protection in the Context of Priorities of the Sendai Framework for Disaster Risk Reduction,²⁸ and in the analytical report Current State of Ukrainian Legislation Regulating Natural and Anthropogenic

Risks in the Context of Priorities of the Sendai Framework for Disaster Risk Reduction.²⁹ Both of these suggest introducing changes to the national legislation. The former provides recommendations for improving the legislation on civil protection, the latter deals with the use of tools for preventing economic risks, such as insurance. A white paper named Disaster Risk Management and Civil Protection Systems in the Context of Priorities of the Sendai Framework for Disaster Risk Reduction should also be mentioned. It focuses on the development of a national system for monitoring risks of natural and man-made disasters. Analytical report Coordination of Risk and Threat Management³⁰ is aimed at finding a solution to coordinate cooperation between all parties involved in risk management.

The relevance of this study is determined by the fact that LGs have to be able to ensure safety within their territories.³¹ For this purpose, they are given a number of powers, particularly to develop and approve development strategies of cities, towns and villages based on the State Strategy for Regional Development of Ukraine.³² This report analyses not only the legislative powers of LGs, but also their institutional and procedural

²⁵ Technical Recommendations for Reducing the Risk of Disasters and Vulnerability of the Population in Eastern Ukraine, https://r2p.org.ua/wp-content/uploads/2021/02/techrecs_3p-design-new.pdf.

²⁶ Concepts of Creating a State System for Protecting the Critical State Systems, <https://zakon.rada.gov.ua/laws/show/1009-2017-%D1%80#Text>.

²⁷ Draft Law of Ukraine On Critical State Systems, http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=71355.

²⁸ State of the Current Ukrainian Legal Framework Regulating Civil Protection in the Context of Priorities of the Sendai Framework for Disaster Risk Reduction, https://r2p.org.ua/wp-content/uploads/2020/10/report-on-civil-protection_3p-consortium.pdf.

²⁹ State of Ukrainian legislation regulating risks of natural and anthropogenic disasters in the context of priorities of the Sendai Framework Program for Disaster Risk Reduction, https://r2p.org.ua/wp-content/uploads/2020/10/white_book_risks_3p-consortium.pdf.

³⁰ Coordination of Risk and Threat Management analytical report, <https://www.ua.undp.org/content/ukraine/uk/home/library/recovery-and-peacebuilding/risk-and-threat-management-coordination.html>.

³¹ Article 38 of the Law of Ukraine On Local Self-government in Ukraine, <https://zakon.rada.gov.ua/laws/show/280/97-%D0%B2%D1%80#Text>, Article 8 of the Law of Ukraine On National Security of Ukraine, <https://zakon.rada.gov.ua/laws/show/2469-19#Text>.

³² Part 2 of Article 16 of the Law of Ukraine On the Principles of State Regional Policy of Ukraine, <https://zakon.rada.gov.ua/laws/show/156-19#n209>.

capabilities to act in their own interests, in particular to achieve the priorities set out in the Sendai Framework. The preparation of this report helped to identify that LGs do not have enough powers to represent and secure the interests of communities in the development and adoption of national and regional documents regulating the engineering protection of territories and ensuring safety within the territories entrusted to them, particularly the environmental safety (risk detection and management). If they do have such powers, they fail to use them efficiently.³³ To clarify, we should say that the above statement applies to an average LG, while there indeed are some cases where the heads of LGs have special personal management skills that allow such LGs to gain significant efficiency.

The issue of the prevention of natural, man-made and civil emergencies is cross-cutting and complex. Today's legislation provides tools allowing for an integrated comprehensive approach in strategic planning, primarily by means of reducing natural and anthropogenic risks. For example, the procedure of strategic

environmental assessment (SEA)³⁴ facilitates compliance with the first priority of the Sendai Framework that has to do with understanding of disaster risks, their identification and inclusion in the security agenda. This tool helps involve all stakeholders in the process of implementation of a strategic document at the national or local level. Environmental impact assessment (EIA)³⁵ contributes to the compliance with the second priority of the SFDRR through the development of environmental conditions necessary for the prevention of disasters. The quality of SEA and EIA, in turn, is affected by the amount of available information about the state of the environment at the time when relevant governance decisions are made,³⁶ which requires the development of monitoring and statistics tools. In the long run, regular use of such tools will contribute to the development of risk-based planning, help reduce risks and improve the overall level of safety and prevention of natural, man-made and civil emergencies.

³³ Code of Civil Protection of Ukraine, <https://zakon.rada.gov.ua/laws/show/5403-17#Text>.

³⁴ Law of Ukraine On Strategic Environmental Assessment, <https://zakon.rada.gov.ua/laws/show/2354-19#Text>.

³⁵ Law of Ukraine On Environmental Impact Assessment, <https://zakon.rada.gov.ua/laws/show/2059-19#Text>.

³⁶ Review of the Current State of Tailing Storage Facilities in Donetsk and Luhansk Oblasts, <https://www.osce.org/files/f/documents/9/9/486259.pdf>.

RESEARCH METHODOLOGY

During the preparation of this report, the overall disaster risk situation in 18 communities bordering the contact line (as of February 24, 2022) has been analysed, together with strategic documents adopted in those communities.

The research methodology includes qualitative and quantitative methods. The authors have conducted semi-structured interviews with government officials responsible for the identification of disaster risks, accounting for such disasters and taking response measures. Their personal experience, knowledge, skills, views, opinions and difficulties faced by them in managing risks within a territorial community have been analysed. A questionnaire was prepared and sent to 18 frontline communities, namely to the Sievierodonetsk, Hirske, Popasna, Shyrokye, Stanytsia Luhanska, Nyzhnioteple, Shchastya, Lysychansk, Toretsk, Svitlodarsk, Ocheretyne, Avdiivka, Marinka, Vuhledarsk, Myrne, Olhynka, Sartana, and Volnovakha civil-military administrations.

The same questionnaires were distributed at the district (Bakhmut district of Donetsk oblast and Sievierodonetsk in Luhansk oblast) and regional (Donetsk and Luhansk oblasts) levels. The analysis of the ways in which the interests of local communities are taken into account in discussing and adopting state planning documents (with or without the use of the SEA procedure) was conducted. The questionnaires were used as an auxiliary tool aimed at structuring the discussion around the suggested topic and preparing future discussions.

Discussion meetings were held with representatives of Hirske, Nyzhnioteple, Svitlodarsk, Avdiivka, Myrne and Olhynka civil-military administrations. Those were held online due to the pandemic restrictions that were in effect at the time. During the presentation of the results of the questionnaire-based survey, the correctness of the conclusions was double-checked and options for solutions proposed in this report were discussed. In addition, 2 offline meetings were held at the district level, namely in the Bakhmut and Sievierodonetsk districts. Online/offline meetings were held with the SES and oblast state administrations (OSAs) of Luhansk and Donetsk civil-military administrations. At the national level, online meetings with the SES and representatives of the MEPNR, SEI, State Water Resources Agency and State Forest Resources Agency were held, dedicated to the discussion of the main conclusions presented in this document.

Eight disaster risk reduction strategies developed by the international non-governmental organization ACTED³⁷ for Popasna, Myrne, Olhynka, Ocheretyne, Svitlodarsk, Volnovakha, Hirske and Sartana civil-military administrations were analysed. The extent to which strategic documents of the highest level reflect the risks identified in the above documents was assessed.

The authors have also structured information that must be available to communities and is necessary for understanding of risks, decision-making, tracking the results of measures taken

³⁷ ACTED, <https://www.acted.org/en/countries/ukraine/>.

and further planning³⁸ of readiness for risks and for “Build Back Better”. Tables and charts representing the flow information for exchange between state authorities have been prepared. The report also contains information that is important for communities in the context of disaster risk management.

Advocacy campaigns and meetings with public authorities were held to ensure the efficiency and viability of the solutions proposed in this analytical report.

³⁸ Risk vs Uncertainty: How to Deal With It, <https://youcontrol.com.ua/articles/ryzyk-vs-nevyznachenistyak-z-tsym-pratsiuvaty/>.

UNDERSTANDING DISASTER RISK

In the current situation, there is insufficient understanding of disaster risk at all levels of public management and administration. This is primarily due to a lack of data and access to information related to security issues: environmental monitoring is not organized properly; monitoring of the implementation of state planning documents in accordance with the SEA procedure is not carried out; monitoring of the consequences of projects that have passed the EIA, and other types of monitoring are not carried out. Both the legal framework and practice are focused on disaster relief.

Despite the fact that the risk-based approach to planning is a generally accepted tool for effective management, most of the national and local strategic documents analysed for this report do not contain an algorithm for drawing up and implementing such strategies that would be clear for most of the communities.

National level. Out of the 39 documents analysed, only one contains a comprehensive explanation and understanding of disaster risks (see Appendix 1, Table 1. Analysis of national strategic documents' compliance with the Sendai Framework). It is the Law of Ukraine On the

Key Principles (Strategy) of the State Environmental Policy of Ukraine until 2030.³⁹ It states that "the introduction of an environmental risk management system in all areas of the national economy will contribute to the prevention of anthropogenic and environmental disasters". The Law lists risks (dangerous factors that affect the state of the environment and the country's economy), as well as defines "Goal 4. Reduction of environmental risks to minimise their impact on ecosystems, socio-economic development and public health", which does not cover the risks of industrial accidents. These are covered by "Goal 3. Ensuring the integration of environmental policy into the process of making decisions concerning socio-economic development of Ukraine". Hence, a deep understanding of the importance of assessing risks of natural and anthropogenic disasters for the country's economic development is laid down at the level of the main strategic document on state environmental policy.

Four more strategies (Strategy of Public Security and Civil Protection of Ukraine,⁴⁰ State Strategy for Regional Development in 2021–2027,⁴¹ On Approval of the Strategy of Environmental Safety and Adaptation to Climate Change until 2030, National Mineral Resource Base

³⁹ Law of Ukraine On the Key Principles (Strategy) of the State Environmental Policy of Ukraine for the Period until 2030, <https://zakon.rada.gov.ua/laws/show/2697-19#Text>.

⁴⁰ Strategy of Public Security and Civil Protection of Ukraine approved on 29.06.2021, <https://mvs.gov.ua/ministry/normativna-baza-mvs/proekti-normativnix-aktiv/strategiya-gromadskoyi-bezpeki-ta-civilnogo-zaxistu-ukrayini-zatverdzeno-vid-29062021>.

⁴¹ State Strategy for Regional Development in 2021–2027 <https://zakon.rada.gov.ua/laws/show/695-2020-%D0%BF#Text>.

Development Program of Ukraine until 2030⁴²) contain no references to data sources. Often descriptive information and data are copied from one document into another and do not refer to any primary source of information, which indicates a lack of proper monitoring and collection of statistical data in the field of environmental protection. This makes it difficult, even impossible at times, to carry out proper risk assessment.

Other 33 strategic documents poorly define disaster risks. Moreover, such documents as the Strategic Defence Bulletin of Ukraine⁴³ and the Strategy for the Development of the Military-Industrial Complex of Ukraine do not identify any potential disaster risks at all.⁴⁴

Regional level. At the regional level, we have analysed 8 strategic documents, including strategies and plans for the implementation of strategic documents. This analysis was aimed at confirming the validity of the conclusion that it was impossible to achieve all the priorities of the Sendai Framework in a single document. Some documents had to do with

the identification and description of risks, while others were dedicated to risk-preventing measures or disaster recovery. It was found that the level of risk description varies depending on the purpose of a document.

To be specific, in our opinion, the Regional Program for Monitoring the State of the Environment in Donetsk Oblast in 2020–2024⁴⁵ and Action Plan for the Rebuilding of Damaged (Destroyed) Social and Transport Facilities, Housing Stock and Life Support Systems in Donetsk and Luhansk Oblasts⁴⁶ do not sufficiently describe risks and potential threats. On the other hand, a number of other documents sufficiently describe existing risks and potential hazards. These include:

- Program for Ensuring a Minimum Sufficient Level of Protection of the Population and Territory of Donetsk Oblast from Anthropogenic and Natural Disasters in 2021–2023,⁴⁷
- Donetsk Oblast Development Strategy until 2027,^{48,49}
- Luhansk Oblast Development Strategy for 2021–2027,⁵⁰

⁴² National Mineral Resource Base Development Program of Ukraine for the Period Until 2030 <https://zakon.rada.gov.ua/laws/show/3268-17#n14>

⁴³ The Strategic Defence Bulletin of Ukraine <https://zakon.rada.gov.ua/laws/show/473/2021#n2>

⁴⁴ Strategy for the Development of the Military-Industrial Complex of Ukraine <https://zakon.rada.gov.ua/laws/show/372/2021#Text>

⁴⁵ Order of the Head of the Oblast State Administration, Head of the Oblast Civil and Military Administration of 13.01.2020 No. 20/5–20) 2020–2024 Department of Ecology and Natural Resources of the Oblast State Administration <http://ecology.donoda.gov.ua/wp-content/uploads/2020/01/%D0%9F%D0%A0%D0%9E%D0%93%D0%A0%D0%90%D0%9C%D0%90-2020-2024.pdf>

⁴⁶ Action Plan for the Rebuilding of Damaged (Destroyed) Social and Transport Facilities, Housing Stock and Life Support Systems in Donetsk and Luhansk oblasts <https://zakon.rada.gov.ua/laws/show/1002-2014-%D1%80#Text1>

⁴⁷ Order of the Head of the Oblast State Administration, Head of the Oblast Civil and Military Administration of 05.10.2020 No. 1102/5–20 Department of Civil Protection, Mobilization and Defence Work of the Oblast State Administration <https://dn.gov.ua/storage/app/sites/1/publicinfo/LegalAct/1102-20.pdf>

⁴⁸ Donetsk Oblast Development Strategy until 2027 <https://dn.gov.ua/projects/strategiya-rozvitku-doneckoyi-oblasti-na-period-do-2027-roku>

⁴⁹ In this strategy, an internal inconsistency has been found, particularly, between strategic Goals 3 and 4 (regarding safety in general and environmental safety).

⁵⁰ Luhansk Oblast Development Strategy for 2021–2027, http://loga.gov.ua/sites/default/files/collections/strategiya_lugansk_2027_last.pdf.

- Donetsk and Luhansk Oblasts Economic Development Strategy until 2030,⁵¹
- State Targeted Program for Recovery and Peacebuilding in the Eastern Regions of Ukraine,⁵²
- Regional Program for the Support of Agro-Industrial Complex and Development of Land Relations in the Donetsk Oblast in 2021–2027.⁵³

Local level. The analysis conducted at the local level confirms that the practice of using a risk-based approach in strategic planning, especially in the field of disaster risk reduction, is not sufficient at the level of communities. Today, disaster reduction strategies are being developed by territorial communities⁵⁴ in the east of Ukraine with the help of foreign partners. First and foremost, we are talking about such communities in the Donetsk and Luhansk oblasts as Hirske, Ocheretyne, Svitlodarsk, Popasna, Myrne, Olhynka, Volnovakha and Sartana. The analysed documents have been developed and submitted for public discussion, but have not yet been approved by

official decisions of the relevant civil-military administrations. It is worth mentioning that the very fact of developing disaster risk reduction strategies in these communities (and, in some communities, the preparation of civil protection development strategies and risk-based community development strategies) is a significant step forward. This allows community authorities to rely primarily on a risk-based approach in strategic planning. Given the situation in eastern Ukraine,⁵⁵ the use of such methodologies by the communities of Donetsk and Luhansk oblasts is more than justified, since it contributes to the adoption of sustainable decisions and the achievement of Sustainable Development Goals.

The low level of risk identification in strategic documents of all levels is primarily due to the lack of an effective and efficient environmental monitoring system at the state level. The report further analyses the reasons for the low level of risk understanding at all levels and offers recommendations to fix it.

⁵¹ Donetsk and Luhansk Oblasts Economic Development Strategy until 2030, <https://zakon.rada.gov.ua/laws/show/1078-2021-%D1%80#Text>.

⁵² State Targeted Program for Recovery and Peacebuilding in the Eastern Regions of Ukraine, <https://zakon.rada.gov.ua/laws/show/1071-2017-%D0%BF#Text>, the strategic environmental assessment of amendments to this document was carried out in July 2021. The Strategic Environmental Assessment Report can be found at https://minre.gov.ua/sites/default/files/field/file/zvit_po_seo.pdf.

⁵³ Order of the Head of the Oblast State Administration, Head of the Oblast Civil-military Administration of 30.06.2021 No. 666/5–21 Department of Agro-industrial Development and Land Relations of the Oblast State Administration, <https://agro.dn.gov.ua/wp-content/uploads/2021/07/rozporядzhennya-pro-zatverdzhennya-programi-APK-666-vid-30.06.2021.pdf>.

⁵⁴ The focus of this report was only on the communities of Donetsk and Luhansk oblasts.

⁵⁵ We are talking about the situation as of 24.02.2022, but even after the outbreak of war, the risk-based approach has by all means kept its relevance.

1.1. FACTORS AFFECTING THE IDENTIFICATION OF RISKS IN STRATEGIC DOCUMENTS

Lack of information on risks

The insufficient level of risk identification in strategic documents is due to the fact that today's system lacks common methodological foundations for determining risks, assessing the probability of their occurrence and the complexity of possible solutions. There is no unified approach to collecting, processing, storing, distributing and managing risk information. It is information about risks that should be the basis for making strategic decisions.⁵⁶

Lack of risk management experience and institutional changes

The results of the survey and meetings held for this study confirm that many state and municipal employees have no practical experience in the field of risk management. About 30% of

employees at the local, district and regional levels have no risk management experience. Sometimes, due to decentralization and the establishment of new government agencies, civil protection specialists do not have the actual experience in the field of disaster risk management. This was confirmed in 2 of the 6 communities where the meetings were held.

Changes in the risk management system at the district level due to decentralization led to oblast-level agencies losing an intermediate link in the chain of collecting information about risks in communities. The authority to collect such information and systematise it is currently conferred to district-level agencies, but they are not provided with resources for managing risks.

1.2. POSSIBLE SOLUTIONS

To address the lack of information about risks, it is necessary to keep a record of the sources of such information or resources where it is collected (see Appendix 2. Table of sources of information necessary for disaster risk management at the local level), as well as regularly analyse the information obtained from these sources. The table shows that information about emergency risks is provided by different entities and it is not fully available to local governments. However, for example, the Law of Ukraine On the National Geospatial Data System⁵⁷ lays the foundation for

creating risk-related databases. As of today, these are data from the "Human Life Safety" set, i.e. those concerning the sanitary and epidemiological situation, risks of the spread of infectious diseases, environment state impact on public health. There is also data from the "Natural Risk Zones" set that has to do with areas of environmental emergencies, degraded land (land plots with surface deteriorated due to earthquakes, landslides, karst development, floods, mining, etc.). Systematic collection of data on the state of the environment in a community requires continuous

⁵⁶ DSTU IEC / ISO 31010:2013 Risk management. Methods of general risk assessment, <https://khoda.gov.ua/image/catalog/files/dstu%2031010.pdf>.

⁵⁷ Law of Ukraine On National Geospatial Data Infrastructure, <https://zakon.rada.gov.ua/laws/show/554-20#Text>.

work, systematization and analysis of data. This requires creating dedicated job positions and ensuring relevant technical and methodological support to guarantee improvement of the quality of strategic planning.

The lack of risk management experience may be solved by improving interagency exchange of risk information. This will help increase efficiency, reduce overlapping of effort, enable

linking of all necessary actions and organizing joint actions.⁵⁸ After all, risk management is becoming an increasingly complex task due to the complexity of interconnections and causal connections. Therefore, improving interagency and inter-level coordination (for example, by creating interagency working groups to reduce disaster risks at the regional level) seems to be the best solution.

1.3. RECOMMENDATIONS

To achieve the Sendai Framework's Priority 1 (Understanding disaster risk), all public authorities should:

- implement an effective and efficient system for monitoring of environmental data, statistical information, data on implemented security projects and their impact, etc.;
- improve skills and means of crisis management, in particular the ability to identify and assess emerging risks, distribute information about them at the regional and national levels and carry out crisis response operations within the scope of their powers;
- establish and maintain a national risk register to process and analyse risks;
- develop methodological approaches to assessing national security risks and the state of relevant capabilities in order to prepare, adopt and implement strategic decisions;
- identify authorized entities to coordinate local risk assessment activities, the establishment and maintenance of risk registers at the local level or at the level of individual entities;
- apply available tools for fast risk assessment and for the development of own tools, e.g. such as FEAT.⁵⁹

⁵⁸ Multiple Breadbasket Failure, <https://undrr.maps.arcgis.com/apps/Cascade/index.html?appid=826a093e725b4bb6a0afbf277bac50ac%20>.

⁵⁹ The Flash Environment Assessment Tool (FEAT) helps identify existing or potential sudden environmental impacts that pose risks to humans, human life support, and ecosystems after sudden natural disasters. Activities are primarily focused on immediate impact of hazardous chemicals, <https://ecentre.org/resources/feat/>.

STRENGTHENING DISASTER RISK GOVERNANCE TO MANAGE DISASTER RISKS

Currently, the organizational and legal framework for risk management needs to be improved by alignment of legal regulations with the Sendai Framework priorities. The need for the improvement is caused by at least two factors: the recently implemented decentralization reform and the high risk of military conflicts (including the active phase of the ongoing war).

Through understanding the importance of the three components of sustainable development,

namely the environmental protection, economic development and social guarantees of civil rights, one can see an important role of coordination, cooperation and communication in decision-making and proper organization of management activities, including disaster management. Without the well-coordinated work of national and local authorities, proper risk management becomes impossible.⁶⁰ This chapter briefly covers some organizational and legal problems of disaster risk management and proposes solutions.

2.1. GENERAL TENDENCIES IN THE DEVELOPMENT OF A STRATEGIC FRAMEWORK FOR DISASTER RISK REDUCTION AND THE POSSIBLE VECTOR OF SUCH DEVELOPMENT

A number of national strategic documents emphasize the importance of improving the organizational and legal framework for disaster risk management. This is true, in particular, for the following documents:

- National Security Strategy of Ukraine. Human Security is the Security of the Country,⁶¹
- Strategies of Public Security and Civil Protection of Ukraine project,⁶²
- The Law of Ukraine On the Basic Principles (Strategy) of the State Environmental Policy of Ukraine until 2030.⁶³

⁶⁰ The International Recommendations on Internally Displaced Persons Statistics (IRIS), https://iom.org.ua/sites/default/files/international_recommendations_on_idp_statistics_ukr.pdf.

⁶¹ National Security Strategy of Ukraine. Human Security is the security of the country, <https://zakon.rada.gov.ua/laws/show/392/2020#n12>.

⁶² Strategies of Public Security and Civil Protection of Ukraine project, <https://mvs.gov.ua/ministry/normativna-baza-mvs/proekti-normativnix-aktiv/strategiya-gromadskoyi-bezpeki-ta-civilnogo-zaxistu-ukrayini-zatverdzeno-vid-29062021>.

⁶³ Law of Ukraine On the Key Principles (Strategy) of the State Environmental Policy of Ukraine for the Period until 2030, <https://zakon.rada.gov.ua/laws/show/2697-19#Text>.

In particular, they stipulate the creation of an integrated system of state monitoring and long-term scientific research of the state of all components of the environment. This system must be legally and technically supported in accordance with the requirements of European Union legislation and operate in real time. It includes the development of the security and defence sector. To do this, Ukraine will:

- strengthen democratic civilian control over the security and defence sector of Ukraine as a guarantee of the legality and effectiveness of its components;
- increase the efficiency of management, strengthen supervision and the responsibility of officials of the security and defence sector;
- review and ensure the implementation of legislation in the field of national security and defence, in particular, clarify and implement the provisions of the Law of Ukraine On the National Security of Ukraine.⁶⁴

At the regional level (documents in the Donetsk and Luhansk oblasts were analysed), there is an extensive network of local regulations covering disaster risk reduction and security issues to some extent.

At the local level, we analysed the above-mentioned draft of disaster risk reduction strategies.

We present the steps that, in our opinion, are to be implemented first and foremost to shape the possible vector of development of a strategic framework for disaster risk reduction:

- bring closer and coordinate the content of legislation on environmental and civil protection;
- implement a risk-based approach in strategic framework and strengthen the disaster prevention (shifting the focus of efforts and investment from response and elimination to prevention);
- improve the Unified State Civil Protection System (primarily by improving internal coordination, as well as strengthening the prediction and risk-informed development component);
- expand the scope of the “victim of an emergency” term by including persons affected by all the consequences of an emergency (direct and indirect).

In addition, it is suggested to:

- create a full-scale system for monitoring environmental and anthropogenic risks;
- strengthening inter-level (vertical) and intersectoral (horizontal) coordination in all areas related to disaster risk management (environmental protection, civil protection, security, energy, etc.) including communities in the coordination mechanisms;
- focus science and education on solving risk-based approaches;
- more active involvement of businesses (especially those companies that own large industrial facilities and critical infrastructure facilities).

Below you can find a brief explanation and description of the necessary steps.

⁶⁴ Law of Ukraine On National Security of Ukraine, <https://zakon.rada.gov.ua/laws/show/2469-19#Text>.

2.2. PRIORITY STEPS FOR THE DEVELOPMENT AND IMPLEMENTATION OF THE PROVISIONS OF THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION WITHIN UKRAINE'S REGULATORY SPHERE

Step 1

Convergence and harmonization of legislation on civil and environmental protection

It should be mentioned that now there is a certain inconsistency between legal regulations in the field of civil protection on the one hand, and in the field of environmental protection, on the other. In particular, the Civil Protection Code, the Emergency classifier and the National Risk Standard are not consistent with procedures such as strategic environmental assessment and environmental impact assessment. As a result, civil protection could not cover the scope of planning and preventing natural and anthropogenic disasters. If we analyse the methodological recommendations contained in the Partnerships for the Sustainable Development of Cities. Quick Risk Assessment,⁶⁵ which were developed as a sustainability tool for sustainable communities, we will see that local Ukrainian communities do not have the tools and resources needed to implement a risk-based approach.

One of the ways to solve this problem could be the involvement of SES units in the process of advising on strategic environmental assessment and environmental impact assessment procedures, even on a paid basis. Thus, relevant amendments should be made to the resolution of the Cabinet of Ministers of Ukraine

No. 1102 of October 26, 2011 On Some Issues of Providing Paid Services by Divisions of the Ministry of Emergency Situations.⁶⁶

Step 2.

Introduction of a risk-based approach into the legislative framework and strengthening the emergency prevention component

From the point of view of management, a broader look on the consequences of emergencies for people encourages the management work of authorities related to causes and consequences of risks. The more people are affected by natural disasters, the greater the burden on budgets at all levels is, because the provision of social services, compensation and other guarantees should be carried out. Given this, it is particularly important to reform the legislative framework towards its greater focus on risk prevention. For example, the Law of Ukraine On Insurance adopted in 2021 does not contribute to a proper risk assessment, because it insures the activities of business entities against the occurrence of risks, but does not create financial mechanisms to encourage accounting for engineering and technical measures to prevent disasters and other incentives. This issue can be resolved by introducing appropriate amendments to the Law of Ukraine On Insurance and making it more risk-oriented. In this regard, the Methodology

⁶⁵ Quick Risk Estimation (QRE) Tool, <https://mcr2030.undrr.org/quick-risk-estimation-tool>.

⁶⁶ Resolution of the Cabinet of Ministers of Ukraine No. 1102 of October 26, 2011 On Some Issues of Providing Paid Services by Divisions of the Ministry of Emergency Situations, <https://zakon.rada.gov.ua/laws/show/1102-2011-%D0%BF#Text>.

for Loss Assessment after Anthropogenic and Natural Disasters should also be changed.⁶⁷ It is reasonable not only to assess the disaster consequences, but rather expand assessment to identify and assess risks in order to prevent them.

After all, the current methodology for forming a material reserve is based on the principle of allocating finances to the events that occurred. However, there is no provision for financing preventive measures — reconstruction of dams, implementation of fire protection planning within forests, elimination of dead wood, etc. Hence, the following regulations require changes: Resolution On Some Issues of Providing Paid Services by Divisions of the Ministry of Emergency Situations⁶⁸ and the State-level Emergency Response Plan.⁶⁹ Strengthening the emergency prevention component will significantly reduce the cost of eliminating their consequences in the future.

Step 3

Improvement of the Unified State Civil Protection System

Legislative acts regulating the functioning of the Unified State Civil Protection System (hereinafter USSCP) also need to be improved. Its tasks include forecasting and assessing the socio-economic consequences of emergency situations, identifying the need for forces, means, material and financial resources needed (Article 8 of the Civil Protection Code of Ukraine — hereinafter referred to as the CCPU). However, there are no mechanisms for

performing these tasks. Paragraph 19 of the Article 17 of the CCPU defines that the SES together with central and local authorities, local self-government bodies, enterprises, institutions, organizations forecasts the probability of occurrence of emergency situations, identifies risk indicators and zones the territory of Ukraine for disaster risks. The complexity of the issue of Disaster Risk Management requires identifying a clear way of interaction of state authorities that are part of the USSCP. It covers both studying the territory, technologies, analyzing the state of the environment, monitoring natural phenomena, anthropogenic impacts, forming a single database with accessible information for everyone and planning measures for prevention, emergency response, mitigation and recovery based on “Build Back Better”. In other words, the improvement of the USSCP should take place by improving internal coordination, as well as strengthening the forecasting and risk-informed development components.

Step 4

Expanding the scope of the “victim of an emergency” term

The analysis of strategic documents and the legislative framework shows that there is a certain inconsistency in concept definition between the Ukrainian legislative framework and international documents. For example, the Civil Protection Code of Ukraine defines the term “victims of a man-made or natural disaster” (hereinafter referred to as victims) as persons whose health has been harmed as a result of a disaster (Article 2 of the CCPU).

⁶⁷ Methodology for Loss Assessment after Anthropogenic and Natural Disasters, <https://zakon.rada.gov.ua/laws/show/175-2002-%D0%BF#Text>.

⁶⁸ On Some Issues of Providing Paid Services by Divisions of the Ministry of Emergency Situations, <https://zakon.rada.gov.ua/laws/show/1102-2011-%D0%BF#Text>.

⁶⁹ State-level Emergency Response Plan, <https://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF#Text>.

However, according to the Sendai Framework, victims are persons who are directly or indirectly affected by a dangerous event. That is, in Ukrainian legislation, the focus is on harm to health, while the SFDRR focuses broadly on any consequences of an emergency for a person. The Sendai Framework program defines directly affected as all those who have suffered injury, illness or other health consequences; those who have been evacuated, displaced, resettled or have suffered direct damage to their livelihoods, economic, physical, social, cultural and environmental values. At the same time, indirectly affected are those individuals who have over time suffered consequences (other than direct consequences or in addition to them) due to disturbances or changes in the economic situation, critical infrastructure, basic services, trade or work, as well as

suffered any social, medical and psychological consequences. It is important to consider that victims may experience short- or long-term consequences for their lives, livelihoods, or health, as well as changes in their economic, physical, social, cultural, and environmental values. In addition, people who are missing or dead can be considered directly affected.

So, taking into account the scope of consequences that determine the identity of the victim, the core and content of the Sendai Framework is more consistent with the constitutional provision on ensuring a safe environment for life and health. Therefore, it would be appropriate to amend the relevant provisions of Article 2 of the CCPU by expanding the relevant definition.

2.3. RECOMMENDATIONS

- Expand the scope of “victim of a man-made or natural disaster” term defined in Article 2 of the Civil Protection Code of Ukraine;
- Integrate civil protection standards, especially with regard to engineering and technical support, into the legislation on SEA and EIA;
- Strengthen practical cooperation between StateGeoCadastre, the SES and local self-government bodies on zoning areas vulnerable to disasters, in particular, through the development of Geospatial Information Systems;
- Develop methodologies for estimating the cost of direct and indirect losses during an emergency together with scientists and practitioners, conduct educational events among interested parties to develop skills in working with such programs;
- Create and maintain an effective environmental monitoring system.

INVESTING IN DISASTER RISK REDUCTION FOR RESILIENCE

Currently, investments in Ukraine in general and into Disaster Risk Reduction in different places to strengthen their capacity, are targeted. They are not frequent and often depend more on the subjective factor, as well as the qualities of local managers, public organizations and ordinary residents, rather than on planned activities at the level of authorities. The situation has a chance to change as a result of the post-war reconstruction.

The direct investments into disaster risk reduction are not stipulated by any strategic documents analysed and mentioned in this report at both local and national level. This

is due to the fact that strategic documents are usually not financial documents and are not always the basis for financing. As a rule, appropriate programs and procedures should be developed in amendment to them. For example, the environmental conditions for the implementation of planned activities described in the conclusion of the Environmental Impact Assessment can be met by implementing various measures of different cost. This cost is one of the safety criteria, as the more funded measures are necessary to reduce the negative impact of a potential emergency, the lower the amount of losses and the amounts required to eliminate the consequences of an emergency are in the future.⁷⁰

3.1. DEVELOPMENT OF A STRATEGIC FOUNDATION FOR INVESTING IN RISK REDUCTION

The analysis of strategic documents at the national level indicates the need to actively promote the idea that risk management is a way of innovative development of territories that have a high degree of such threats. For example, the Concept of the State Target Program for Just Transition of Coal Regions

of Ukraine until 2030 has three options for coal transformation.⁷¹ One of these options includes the need to diversify the local economy and increase the level of socio-economic development of coal regions of Ukraine, and also corresponds to the State Strategy for Regional Development for 2021–2027.⁷² This

⁷⁰ At the EU level, there is a ratio of 4 to 1.

⁷¹ Concept of the State Target Program for Just Transition of Coal Regions of Ukraine until 2030, <https://zakon.rada.gov.ua/laws/show/1024-2021-%D0%BF#Text>.

⁷² State Strategy for Regional Development for 2021–2027, <https://zakon.rada.gov.ua/laws/show/695-2020-%D0%BF#n11>.

approach sets up a foundation for innovative solutions to reduce risks and use innovation as a way to economic development. For example, the existence of waste piles is not only an ever-increasing threat, but also a resource of minerals at the same time. By investing in the latest technologies of processing such waste rocks, not only an economic effect is obtained, but also the risk of environmental pollution due to the existence of waste piles is reduced.⁷³ Most of the measures necessary to stop the deterioration of the environmental and man-made situation in oblasts cover engineering and technical measures. They can be developed and suggested by the relevant divisions of the SES both independently, taking into account the Unified State Civil Protection System and its information component, and at the request of communities.

The formation of a material reserve for disaster response requires a more individual approach, which will be possible only when communities identify real requests for risk prevention. After all, within a community (even in the same oblast), needs and risks often vary and require individual risk management plans.

Creating financial mechanisms not only for risk assessment, but also for attracting investment and developing regions with a clear understanding of risks will allow us to reach a qualitatively different level of managing the latter and ensuring security. Risk understanding

encourages data collection, threat analysis, taking action, and developing solutions for the future. So, the disaster risk does not reduce the intensity of development, but, on the contrary, encourages this development through the transition to a higher level, through attracting more players to collect information, analyse it and find solutions.⁷⁴

Claire Connolly Knox, Emergency and Crisis Management academic program coordinator at the School of Public Administration, University of Central Florida, mentions: "According to the National Institute of Construction Science, for every \$1 spent on mitigation, there are \$6 savings after a disaster."^{75,76}

In order to justify the expediency of investing funds in preventive measures at the community level, we suggest allowing municipal emergency services to carry out mandatory emergency services on a contractual basis with business entities, industries and individual territories that are subject to such services, as well as making appropriate changes to the Resolution of the Cabinet of Ministers of Ukraine.⁷⁷ Thus, local self-government bodies will receive an additional source of information on improving the emergency situation of business entities and territories and eliminating identified violations of compliance with anthropogenic safety conditions.

⁷³ Green Book of Coal Market Regulation, <https://bit.ly/3SvM8fA>.

⁷⁴ Report of the Secretary-General on SDG Progress 2019, https://sustainabledevelopment.un.org/content/documents/24978Report_of_the_SG_on_SDG_Progress_2019.pdf.

⁷⁵ The Disaster Management Cycle: 5 Key Stages & How Leaders Can Help Prepare, <https://www.ucf.edu/online/leadership-management/news/the-disaster-management-cycle/>.

⁷⁶ The Disaster Management Cycle, https://www.gdrc.org/uem/disasters/1-dm_cycle.html.

⁷⁷ List of business entities, industries and individual territories that are subject to permanent and mandatory emergency rescue services on a contractual basis, <https://zakon.rada.gov.ua/laws/show/763-2016-%D0%BF#Text>.

In this context, it is appropriate to consider financial instruments of Addis Ababa Action Agenda,⁷⁸ in particular, the mixed financing instruments. For example, public-private partnerships aiming at reducing specific investment risks and additional private sector funding in areas that need to be developed in accordance with regional and national development programs.⁷⁹ Also, the draft Law On the Economic Passport of a Ukrainian with relevant amendments can potentially be a good tool for solving this issue.⁸⁰ Thus, keeping records of all resources and accumulating funds for children will contribute to a more rational attitude to their use.

Investments in the preservation of cultural sites can also be an investment in technogenic safety. Anthropogenic hazards in natural and technological spheres create hazards to protected historical sites. In protected archaeological sites within the zones of protection of monuments, historical areas of settlements covered by the List of historical sites of Ukraine, urban planning, architectural or landscape transformations, construction, reclamation, road, earthworks are prohibited without the permission of the relevant cultural heritage protection authority.⁸¹

A good example of using the crisis as an incentive for development is the case of PRJSC AVDIIVKA COKE PLANT. After the events of 2014 and cutting off the plant from electricity supply, it not only retained its activities, but also provides heat and electricity to the city.⁸² This was achieved due to the latest technologies for the use of coke and blast furnace gases as energy resources in accordance with the Law of Ukraine On Alternative Energy Sources.⁸³ Other examples are gas capture in landfills and electricity generation, biogas production from urban wastewater treatment plants, etc.

In Ukraine⁸⁴ there is sufficient legislative support for the basis for the development of innovation activities. Among other things, there are approved requirements for the feasibility study of an investment project with significant investments. According to these requirements, the feasibility study should contain information about the project, such as information about previous studies of significant geological, geotechnical, environmental, archaeological or other risks associated with land plots that are necessary for the implementation of the project (if any), and a probability assessment carried out, which is required, in particular, by procedures such as environmental impact

⁷⁸ The Addis Ababa Action Agenda was adopted at the Third International Conference on Financing for Development (Addis Ababa, Ethiopia, 13–16 July 2015) and approved by the UN General Assembly in its Resolution 69/313 of 27 July 2015. The document creates a solid foundation to support the implementation of the 2030 Agenda for Sustainable Development. It provides a new global framework for financing Sustainable Development by aligning all funding flows and policies with economic, social and environmental priorities. Such a policy includes a full range of policy actions with more than 100 specific actions that address all sources of finance, technology, innovation, trade, debt and data to support the achievement of the Sustainable Development Goals.

⁷⁹ Addis Ababa Action Agenda of the Third International Conference on Financing for Development, https://sustainabledevelopment.un.org/content/documents/2051AAAA_Outcome.pdf.

⁸⁰ Draft Law On the Economic Passport of a Ukrainian, https://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=73372.

⁸¹ List of historical sites in Ukraine, <https://zakon.rada.gov.ua/laws/show/878-2001-%D0%BF#Text>.

⁸² This information is current at the time of conducting the research.

⁸³ Bulletin of the IV International Scientific and Practical Conference Problems of Machinery and Technology of Processing Industries (May 16, 2018), <https://donntu.edu.ua/wp-content/uploads/2018/09/%D0%A1%D0%B1%D0%BE%D1%80%D0%BD%D0%B8%D0%BA.pdf>.

⁸⁴ Law of Ukraine On Innovation Activities, <https://zakon.rada.gov.ua/laws/show/40-15#Text>.

assessment and strategic environmental assessment.

The analysis of strategic documents shows that increasing the volume of investments in order to prevent risks in the future is relevant for Ukraine at national, regional and local levels. Disaster risk reduction strategies

in communities are an effective tool and at the same time a prerequisite for attracting investment in disaster risk reduction. After all, the development of a disaster risk reduction strategy by the community shows that they do not ignore the issue of risks and make systematic efforts to reduce them.

3.2. RECOMMENDATIONS

- Develop public and private partnerships at the local level in order to actively involve businesses in the field of risk management, and create special funds and programs for financing risk-oriented projects;
- Strengthen and develop inter-municipal cooperation in the field of disaster risk reduction (in particular, in the field of community security, civil protection, environmental issues, etc.);
- Include a separate article in the Budget Code of Ukraine, which would allow the authorities after financing disaster risk assessment not to complete the project if the risks prevail over the benefits. Develop a practice that will allow not to qualify such expenses as misuse of funds;
- Amend the Civil Protection Code and ensure the possibility for Civil protection centres to provide paid services to business entities that carry significant disaster risks.

ENHANCING DISASTER PREPAREDNESS FOR EFFECTIVE RESPONSE AND TO “BUILD BACK BETTER” IN RECOVERY, REHABILITATION, AND RECONSTRUCTION

The “Build Back Better” principle in recovery activities after disasters, catastrophes or emergencies is not fully reflected in either the strategic or legislative framework. The plans for recovery, rehabilitation, and reconstruction do not include such an approach. However, this issue may well be covered by funds from local communities and investors.

Among the legal tools in the field of Disaster Risk Reduction that can now be used in Ukraine to increase disaster preparedness, a special place is taken by the Strategic Environmental Assessment (SEA).

Considering the purpose of the Sendai Framework — *preventing the emergence of new risks and reducing threats, investment risks, disasters through the implementation of comprehensive and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, policy and institutional measures that prevent and reduce the effects of impacts of hazards, as well as reduce vulnerability to dangerous situations, increasing preparedness for such situations, response and recovery* — and thus strengthen the capacity to counter disasters and emergencies through the SEA.⁸⁵

Strategic environmental assessment, or SEA, is a procedure aiming at identification, describing, and evaluating the impact of implementing government planning documents on environment and public health. The assessment is carried out regarding the presence or absence of justified alternatives, the development of measures to prevent, reduce and mitigate possible negative consequences, which includes determining the scope of strategic environmental assessment, drawing up a report on strategic environmental assessment, conducting public discussion and consultations (if necessary — cross-border consultations), taking into account the report on strategic environmental assessment, the results of public discussion and consultations, informing about the approval of the state planning document and monitoring its implementation in accordance with the procedure established by this Law. Thus, SEA allows assessing all risks as comprehensively as possible and taking into account measures to prevent disasters, mitigate the occurrence of such negative situations, calculate the cost of recovery and be ready to eliminate the consequences based on the “Build Back Better” principle even at the decision-making stage. It also makes it possible to identify early

⁸⁵ Law of Ukraine On Strategic Environmental Assessment, <https://zakon.rada.gov.ua/laws/show/2354-19#Text>.

threats by monitoring the implementation of state planning documents.

As of today, there are SEA tools, EIA, strategic documents, programs, urban planning documentation (comprehensive development plans) and other construction standards that contain descriptions of the principles of construction based on “Build Back Better”. For example, Safety Rules in Coal Mines⁸⁶ define that for the protection of surface objects, capital mine workings from the harmful effects of mining operations, as well as during the construction and operation of underground structures not related to the mining of minerals, measures to reduce the deformation of rocks and the Earth surface are applied.⁸⁷

Development of areas of mineral bedding (except for minerals of local significance), as well as locating in places of their bedding of underground structures that are not related to the extraction of minerals, is allowed as an exception and must be carried out in accordance with the requirements of the Regulations on the Procedure for Building Areas of Mineral Bedding of National Significance.⁸⁸

As of today, the legislator introduces the concept of “yellow lines” in urban planning documentation for identifying the territories that may be affected by a disaster.

Current Technogenic Safety Rules introduced in 2018 determine that in order to ensure technogenic safety in dangerous territories and in areas of possible damage from dangerous objects, the

authorities (including LGs) provide information on disaster risks for inclusion in industry, regional and local programs developed by the authorities in accordance with the powers defined in Articles 18 and 19 of the CCPU, and measures to ensure technogenic safety.⁸⁹ However, the analysis of EIA and SEA reports indicates that the authorities do not fulfill their powers in terms of properly informing business entities and other authorities about threats to technogenic safety within territories or objects. This is especially true for the implementation of consultations under the SEA procedure by the Departments of Ecology and Health Protection of the relevant oblast state administrations.

Methodological recommendations for the implementation of strategic environmental assessment of documents of state planning (hereinafter referred to as DSP) allow preventing costly mistakes in decision-making. SEA notifies in advance about environmentally dangerous ways of the development of the situation, so high-quality use of SEA can reduce the risk of additional costs for damage elimination in the implementation of DSP. SEA also helps save human and financial resources when developing a DSP project. Options that contradict the sustainability principle may be rejected at an early stage.

SEA, same as EIA, are sources of obtaining new information about risks, because these procedures are impossible without conducting new research and predicting risks.

⁸⁶ Safety Rules in Coal Mines, <https://zakon.rada.gov.ua/laws/show/z0398-10#Text>.

⁸⁷ On Approval of Requirements for Ensuring Measures to Protect Surface Objects in Conditions of Harmful Effects of Mining Operations, <https://zakon.rada.gov.ua/laws/show/z0138-21#Text>.

⁸⁸ Regulations On the Procedure for Building up Areas of Mineral Deposits of National Significance, <https://zakon.rada.gov.ua/laws/show/33-95-%D0%BF#Text>.

⁸⁹ Technogenic Safety Rules, <https://zakon.rada.gov.ua/laws/show/z1346-18#Text>.

The Department of Engineering, Technical Measures and Notification of the SES implements state policy measures for engineering protection of the population and territories, implements requirements for engineering and technical measures of civil protection in urban planning and project documentation, at customer's request provides initial data and requirements necessary for the development and design of engineering and technical measures. Within the limits of the granted powers, it organizes the work of district (city) departments on the implementation of engineering and technical measures. This Department should be more actively involved in the SEA and EIA procedures, as well as further development of its activities.

An example of a regional-level strategic document that fully falls under the 4th priority of the Sendai Framework ("Build Back Better") is the Program for Ensuring a Minimum Sufficient Level of Protection of the Population and Territory of the Oblast from Man-Made and Natural Disasters for 2021–2023.⁹⁰

So, the analysis of strategic documents at the national level shows that the general narrative of financing construction works based on the "Build Back Better" principle is generally implemented in the national strategic documents. However, specific examples can be found in draft Disaster Risk Reduction Strategies at the community level. After all, projects will be planned and implemented directly at the local level, with reference to specific territory, and it is the local community that will feel whether it was really "Built Back Better". The example of PRJSC AVDIIVKA COKE PLANT with the introduction of energy production from coke and blast furnace gases illustrates the successful application of the "Build Back Better" principle. Another example is the production of electricity from biogas treatment plants.⁹¹ Fewer pollutants were released in the environment, and the local community received an additional source of heat and electricity.

4.1. SPECIAL ATTENTION TO COMMUNITIES. LOCAL STRATEGIES FOR DISASTER RISK REDUCTION

In accordance with the Laws of Ukraine On Local Self-government in Ukraine⁹² and On Civil-Military Administrations, LGs are one of the state authorities that must guarantee security within the territories entrusted to them. LGs are empowered to manage and plan the

activities of all business entities in such a way as to ensure appropriate level of security. LGs are independent players who with implementation of the decentralization reform have the power to collect information about potential risks when drawing up regional and national

⁹⁰ Order of the Head of the Oblast State Administration, Head of the Oblast Civil and Military Administration of 05.10.2020 No. 1102/5–20 2021–2023 Department of Civil Protection, Mobilization and Defence Work of the Oblast State Administration, <https://dn.gov.ua/storage/app/sites/1/publicinfo/LegalAct/1102–20.pdf>.

⁹¹ Construction of a biogas plant at Lviv wastewater treatment plant is scheduled to begin next year, <https://city-adm.lviv.ua/news/science-and-health/ecology/266791-budivnitstvo-biogazovoji-stantsiji-na-ochisnikh-sporudakh-lvova-planuyut-rozpochati-nastupnogo-roku>.

⁹² Law of Ukraine On Local Self-government in Ukraine, <https://zakon.rada.gov.ua/laws/show/280/97-%D0%B2%D1%80#Text>.

plans, report on existing and potential risks, and defend the interests of their community. Disaster risk management strategies are the tool that helps LGs fulfil their statutory powers in terms of Disaster Risk Management.

Sievierodonetsk City civil military administration (Luhansk oblast)⁹³ has a developed Strategy for the development of the Sievierodonetsk City Territorial Community in 2021–2027,⁹⁴ which partially includes risk management regulations. However, an analysis of the procedure for preparing legislative acts indicates that the form prevails over the content. This is evidenced by the analysis of expert opinions of a specially created Commission for checking such documents for compliance with legislative acts.⁹⁵ Existence of the Department of Civil Protection, environmental safety and labour protection⁹⁶ indicates the correct approach to jointly solving security issues. The confirmation of the importance of risk assessment for the community is the published notice on the planned activities that are subject to environmental impact assessment by the Department of Capital Construction of the Sievierodonetsk city civil-military administration (EDRPOU code: 04011443) to restore the hydrological and sanitary condition of the Borova River with the restoration of the existing spillway dam in the area between Sievierodonetsk and Rubizhne, Luhansk oblast.⁹⁷

Analysis of the decisions of the TES and Emergency Situations of the Sievierodonetsk city civil-military administration on the accident at the sewer collector and the creation of safety centers, fire and rescue units indicates that prevention measures are taken when the risk is clearly realized, identified and the decision has been made. Under such conditions, it is possible to take measures to prevent the occurrence of this risk.⁹⁸ In particular, the decision describes the detection of a crack on the dam, which is identified as an emergency. Not as a risk of an emergency, but as an actual emergency. Only after that, it is possible to allocate funds to eliminate the crack. This approach does not correspond to the Sendai Framework priority for early detection and risk prevention. LGs should have the right to write that there is a risk of a crack on the dam, which may end up with its breakthrough. Therefore, to prevent the risk of cracking, it is necessary to take a number of measures, which should be carried out even before an emergency occurs.

Hirske civil-military administration has developed a Disaster Risk Reduction Strategy that demonstrates a deep understanding of the importance of risk assessment. However, due to the lack of a methodology for developing Disaster Reduction Strategies and the use of a “Methodology for Preparing a Community Development Strategy” for the preparation

⁹³ Sievierodonetsk City civil-military administration, <https://sed-rada.gov.ua/>.

⁹⁴ Development strategy of the Sievierodonetsk City Territorial Community for the Period of 2021–2027, <https://sed-rada.gov.ua/strategiya-rozvitku-sievierodoneckoyi-miskoyi-teritorialnoyi-gromadi-na-period-2021-2027-roku/strategiya-rozvitku-sievierodoneckoyi-miskoyi-teritorialnoyi-gromadi-na-period-2021-2027-roki>.

⁹⁵ Expert opinion of the Sievierodonetsk City Council, <https://sed-rada.gov.ua/sites/default/files/static-page/2021/nid43828-visnovok-pravila-priynyattya-stichnih-vod-71358.pdf>.

⁹⁶ Department of Civil Protection, Environmental Safety and Labor Protection, <https://sed-rada.gov.ua/informaciya-strukturnih-pidrozdiliv-vca-msievierodoneck/viddil-civilnogo-zahistu-ekologichnoyi-bezpeki-ta-ohoroni-praci>.

⁹⁷ Notification of planned activities subject to environmental impact assessment, <https://sed-rada.gov.ua/sites/default/files/static-page/2021/nid45581-povidomlennya-sievierodoneck-greblya-75314.pdf>.

⁹⁸ Meeting of the commission on TES and Emergency Situations: sewer accident and formation of safety centers, fire and rescue units, https://sed-rada.gov.ua/novini-mista/zasidannya-komisiyi-z-pitan-tebtans-avariya-na-kanalizacijnomu-kolektori-ta-utvorenniya-centriv-bezpeki-pozhezhno-ryatuvalnih-pidrozdiliv_02-04-2021.

of this document, the strategy is actually not about risk reduction, but about community development. To simplify the preparation of documents such as a Disaster Reduction Strategy, it is appropriate to apply the algorithm of actions suggested in Appendix 3.

Popasna civil-military administration has developed a Disaster Risk Reduction Strategy. The Strategy does not contain a list of risks inherent in this territory, taking into account the existing territories and objects. There are no recommendations for Disaster Risk Reduction during the preparation of urban planning documentation. There are no algorithms for interaction between local, district, and national authorities during the risk management. The community has neither the list of the source data, nor the sources of the data or data they need to get.

The Strategy for the Development of Civil Protection of Ocheretyne civil-military administration focuses more on the development and organization of civil protection than on the procedure for defining risks and managing them.

The situation is similar to the Strategy for Disaster Risk Reduction in Svitlodarsk territorial community, which is being developed as a development strategy using appropriate methodology and analysis. However, the document does not define the procedure for identifying risks for the community, which indicates

the community has a low level of disaster risk understanding and the ability to manage risks.

Myrne civil-military administration Disaster Reduction Strategy for 2021–2030 is more consistent with the development strategy than the Disaster Reduction Strategy itself. There is only one operational goal — Disaster Reduction. It is achieved through the following tasks: identifying risks, determining the legal regulation of these risks, attracting investments in prevention and recovery to “Build Back Better” in case of such a disaster.

The strategy of the Olhynka community is a Development Strategy. It should be mentioned that the community has a clear vision of its future. Due to its proximity to military operations, the community cannot afford long-term planning.

Overall, an analysis of draft Disaster Risk Reduction Strategies at the local level shows the high potential of this tool for improving disaster preparedness and community resilience. It should be mentioned that if it is meaningfully combined with the Community Development Strategy, the Disaster Risk Reduction Strategy can form a comprehensive vision of the vector of its sustainable development for years to come, as well as help determine the needs, sources of financing and mechanisms for attracting investments.

4.2. RECOMMENDATIONS

- Take into account the emergency experience in planning the development of territories based on “Build Back Better”. Taking it into account, it is recommended to maintain a database of emergencies and create an analytical center for analyzing cause-and-effect relationships regarding their occurrence;
- Involve SES departments in such procedures as EIA and SEA, including on a paid basis, by making amendments to the legislation on EIA and SEA;
- Develop new technological and scientific solutions to find the best available technologies;
- Implement the provisions of the Sendai Framework into developing, implementing and monitoring the implementation of state planning documents;
- Develop the practice of conducting a strategic environmental assessment and methodologies for the qualitative implementation of the stages of “consulting” and “public discussion”;
- Involve the SES in the list of “consulting” bodies to identify and assess risks, search for criteria for evaluating projects based on “Build Back Better”;
- All disaster reduction strategies must undergo SEA, since such documents are related to the areas listed in Article 2 of the Law of Ukraine On Strategic Environmental Assessment and define the conditions for conducting assessments during further procedures of EIA;
- It is suggested to communities to develop the competencies of employees, create conditions for reducing staff turnover, so that institutional memory is preserved;
- Involve a wide range of stakeholders and experts in the development of Disaster Reduction Strategies;
- Organize the exchange of data on the state of the community environment and external influences as part of the creation of a National Geospatial Data System;
- Develop disaster reduction strategies before developing and approving comprehensive territorial development plans.

RECOMMENDATIONS FOR THE IMPROVEMENT OF A STRATEGIC FRAMEWORK FOR DISASTER RISK REDUCTION (INSTITUTIONAL CHANGES IN FINANCIAL AND LEGAL SPHERE, REGULATORY CHANGES)

5.1. REGARDING THE OVERALL REGULATORY AND STRATEGIC SUPPORT OF DISASTER RISK REDUCTION

Make amendments to:

1 Code of Civil Protection of Ukraine (change the definition of a victim)

In particular, amend the definition as follows: a victim is a person who, as a result of a natural or man-made disaster, or the risk of such disaster, has undergone negative changes (normal living conditions have been violated) and who in the future is eligible for receiving social assistance from budgets of various levels.

It is necessary to ensure the possibility of introducing disaster planning through amendments to the Code of Civil Protection, as well as integration of strategic environmental assessment, and environmental impact assessment. In particular, to provide the SES with authority to suggest improvements for impact assessments on the territory of disasters and a list

of recommended engineering and technical measures for adoption.

In Part 2 of Article 45 of the CCPU add paragraph 2–1: “Civil protection issues are assessed for threats and risks. Suggestions are submitted in accordance with the environmental impact and strategic environmental assessment procedures”.

It is recommended to draft emergency response plans for communities (local authorities) in Article 130 of the CCPU.

In addition, the Code should permit civil protection centres to provide paid services to business entities that have significant disaster risks.

2 Add an Appendix — A List of Possible Risks to Methodologies for developing, monitoring and assessment of the effectiveness of

regional development strategies and action plans for their implementation

3 National Environmental Action Plan until 2025

In paragraph 173, after the words “Johannesburg Action Plan”, add a reference to the Sendai Framework: “Offering suggestions for improving the level of environmental safety by introducing an integrated approach to risk assessment, prevention and minimization of the consequences of natural disasters in accordance with the Johannesburg Action Plan and the Sendai Framework”.

4 Order No. 68 of 30.01.2009 On Improving the Classification and Registration of Emergencies

Include provisions concerning the maintenance of an e-register of disaster risks. It is also necessary to authorize LGs to access this register. The register should include data not only on the emergencies that occurred, but also on the identified risks, a description of prevented emergencies and emergencies whose consequences were reduced, or cases where the identification of the risk did not allow the emergency to be prevented.

5 Order No. 98 of 23.02.2006 “On Approval of the Methodology for Identifying Potentially Dangerous Facilities”

Update the order in accordance with the requirements of the Code of Civil Protection, current strategic documents, decentralization reform and the provisions of the Sendai Framework.

Comply with the Order, including by providing this information to LGs and executive bodies of state authorities.

6 Amend the Regulation on the functional subsystem of forest protection of the Unified State Civil Protection System with a chapter on analysis and identification of risks, as well as paragraphs on data exchange and taking it into account in the EIA and SEA procedures.

Add information about the local level of village, urban settlement, and city councils to the system. Similar changes should be made to other provisions on functional subsystems of civil protection.

7 Resolution of the Cabinet of Ministers of Ukraine No. 11 of January 9, 2014 On Approval of the Regulations on the Unified State System of Civil Protection should be fulfilled in terms of the functional subsystems of civil protection systems listed in Appendix 1.

Paragraph 49 should be redrafted in the following phrasing: “To prevent the emergencies, minimize their possible consequences, and organize a coordinated response of civil protection forces to dangers and emergencies, participants of the state civil protection system are involved in strategic environmental assessment and environmental impact assessment procedures”.

Add a clause on providing access to information gathered by subsystems.

Appendix 1 should be amended with the following: The State Environmental Inspectorate of Ukraine is a subsystem of environmental risks, StateGeoCadastre is a subsystem of functional use of the land, StateGeoSrevice is

a subsystem of geophysical monitoring, the State Space Agency is a subsystem of satellite security, the Ministry of Regional Development is a subsystem of local authorities.

Appendix 2 should be amended with the following: Ministry of Natural Resources and Environment is a service of environmental regulations and standards, service for the protection of protected areas, and service for climate change. State Environmental Inspectorate is a service for risk assessment, StateGeoService is a service for protection of minerals, State-GeoCadastre is a service for protection of land and soil.

8 The following should be added to the Regulations on the Medical Specialized Civil Protection Service: “Based on the collected, analysed, and generalized data on the medical and epidemiological situation, predicts its development in areas of emergency situations, foci of strike (disease) and in adjacent territories, as well as in places of temporary accommodation of the evacuated population; prepares recommendations for assessing the consequences of documents adopted by the state for use in strategic environmental assessment, and environmental impact assessment”.

9 The Procedure for Training the Population in Emergency Situations should also cover training in risk identification, risk management, responding and participating in the risk response activities of state authorities where possible.

10 In the Procedure of Investigation and Accounting of Non-Industrial Accidents, describe the procedure for creating commissions to investigate accidents at the UTC level.

Thus, reports on such accidents should be submitted not only to the RSA, but also to LGs. In this case, LGs will have information about emergencies and be aware of possible risks. It is appropriate to maintain the consideration of the issue of emergencies at the district and RSA levels with the participation of LGs to relieve tension on the ground.

11 Amend the Order of the Ministry of Internal Affairs of 06.08.2018 No. 658 On Approval of Classification of Emergency Situations, which provides that in case of the introduction of martial law, all the above mentioned categories of emergencies can receive the status of a military emergency.

So, it is necessary to develop a special procedure for recording an emergency as a military one. Its development is necessary to ensure that there are grounds for exempting businesses from liability for damage caused by uncontrolled economic activities due to martial law or for creating risks of anthropogenic disasters. It is also necessary for assessing risks, getting reparations from the aggressor country in the future, and correct estimation of environmental damage.

12 Include a separate article in the Budget Code of Ukraine to allow the authorities to terminate projects after financing disaster risk assessment, if such assessment finds that the risks are greater than the potential benefits. Develop a practice that will allow you not to qualify such expenses as misuse of funds.

Moreover:

Under the SES, the Ministry of Regional Development, and the MEPNR, it is suggested to create a training center for civil servants to develop skills in working with risks.

When carrying out state control measures, focus on identifying risks and potential hazards,

and make appropriate recommendations in reports.

5.2. REGARDING THE DATA MANAGEMENT IN THE AREA OF DISASTER RISK REDUCTION (DATA COLLECTION, PROCESSING, STORAGE, ETC.)

1 Regulations on data sets to be made public in the form of open data should be expanded to include data sets on monitoring the state of the environment, as well as for determining disaster risks. Add a list of all existing registers, inventories and monitoring that are relevant to disaster risk management.

it wrecked or unsuitable for operation, and/or a risk or actual change in the state of the territory (object) making living and economic activities on the territory (object) impossible. For example, flooding, drought, heavy wind, hurricane, abnormal temperature, subsidence of the territory, degradation”.

Support the adoption of draft Law No. 5886 On Official Statistics.

Paragraph 2 is proposed to be amended as follows:

2 The methodology for identifying potentially dangerous sites should be expanded with the classification of emergency situations, as well as the data registers on the consequences of emergency situations and the estimation of losses.

“Depending on the amount of consequences caused, technical and material resources or the degree of risk of their occurrence, taking into account the resources necessary for their prevention and/or elimination, an emergency situation is classified as state, regional, local or facility level”.

Resolution of the Cabinet of Ministers of Ukraine No. 368 of March 24, 2004 On Approval of the Procedure for Classifying Emergency Situations by their Levels should be brought into compliance with the Civil Protection Code and the provisions of the Sendai Framework.

Paragraph 3–1 should be added, reading:

“To determine the level of risk of an emergency, the following criteria are established:

In particular, a definition of the term “violation of normal living conditions” is proposed to be amended as follows: “violation of normal living conditions is the risk or actual absence of drinking water supply, water drainage, electricity, gas and heat supply and/or a risk or actual change in the technical condition of a residential building (premises) making

- cost of measures to prevent the occurrence of an emergency;
- the period that is scientifically justified before the occurrence of an emergency;
- forecasted consequences of an emergency situation;
- the number of individuals and legal entities affected by the consequences of an emergency;

- the degree of reduction of the consequences of an emergency in case of taking preventive measures;
- the ratio of measures to prevent and reduce the consequences of the occurrence of an emergency and the forecasted cost of consequences in case of an occurrence, taking into account direct and indirect consequences;
- the possibility of preventing human casualties”.

A new paragraph should be added to Paragraph 8: “The presence of risks increases the degree of emergency by one level”.

- 3 **Extend the Methodology for Identification of Risks and their Acceptable Levels for Declaring the Safety of High-risk Objects to civil and environmental safety.**

- 4 **Make amendments to the Resolution of the Cabinet of Ministers of Ukraine No. 175 of February 15, 2002 On Approval of the Methodology for Loss Assessment after Anthropogenic and Natural Disaster.**

The phrase “cost of downtime, cost of evacuation, risks of economic, migration, and reputational losses” should be added to the second paragraph of Chapter 1.

The List of Main Types of Losses Typical for Different Types of Emergencies should be supplemented with the following: climate change, pollution, soil destruction, human losses, and investment losses.

Develop other methodologies similar to those used to assess the risk of flooding.

5.3. REGARDING THE COORDINATION AND EXCHANGE OF INFORMATION IN THE AREA OF DISASTER RISK REDUCTION

- 1 **Amend the Order No. 666/410 of 09.09.2021 On Approval of the Instruction on the Organization of Information Exchange on the Threat or Occurrence of an Emergency and the Course of Elimination of its Consequences between the State Emergency Service of Ukraine and the Foreign Intelligence Service of Ukraine that will allow reporting not only on emergencies that have occurred, but also on the threats or risks of such emergencies. In particular, the form of notification on the threat of occurrence or occurrence of an emergency should be supplemented with columns that will allow to record and identify threats (risks) of occurrence of emergency**

situations, and not just describe the emergencies that have already occurred.

The same applies to:

Order No. 26/49 of 16.01.2020 On Approval of the Instruction on the Organization of Information Exchange on the Threat or Occurrence of an Emergency and the Course of its Elimination between the State Emergency Service of Ukraine and the Ministry of Education and Science of Ukraine.

Order No. 950/560 of 23.11.2018 On Approval of Instructions on Organizing Information

Exchange in the Field of Emergency Prevention and Response between the State Emergency Service of Ukraine and the Ministry of Infrastructure of Ukraine.

2 Paragraph 3–1 should be added to the Order No. 275/600 of 03.04.2018 On Approval of Instructions for Organizing Interaction between the State Emergency Service of Ukraine and the Ministry of Health of Ukraine in Case of Emergency, reading: “In emergency prevention mode”.

In this section, specify in detail the procedure for identifying and assessing the risks of natural and man-made emergencies and conducting a strategic environmental assessment.

3 Regarding Order No. 857/303 of 14.12.2020 On Approval of Instruction on the Procedure for Exchanging Information in the field of Emergency Prevention and Response between the State Emergency Service of Ukraine and the Ministry of Community and Territory Development of Ukraine:

Paragraph 2 of Chapter I should be supplemented with a fourth paragraph at the local level — between the operational coordination centers of territorial SES and local authorities.

Add columns to the message about the threat of occurrence or occurrence of an emergency that will allow recording and identifying threats (risks) of occurrence of emergency situations, and not just describe the emergencies that have occurred.

4 Order No. 879 of 05.11.2018 On Approval of Technogenic Safety Rules should be aligned with the procedures of the EIA and SEA.

Make changes to the Instruction on organizing inspections of Ministries and other central executive authorities, local state administrations and local authorities to comply with the requirements of laws and other regulatory acts on technogenic and fire safety, civil protection, in particular in terms of warning business entities about the risks of disasters, providing information for accounting during the EIA and SEA.

APPENDICES

Appendix 1

STRATEGIC DOCUMENTS' COMPLIANCE WITH THE SENDAI FRAMEWORK REQUIREMENTS

As per the Law of Ukraine On the Principles of State Regional Policy of Ukraine, the country's vector of development is determined by drafted and approved strategies. The main one is the Strategy for Regional Development for 2021–2027. According to this Strategy, there is an approved Action plan for 2021–2023 for the implementation of the State Strategy for Regional Development for 2021–2027. This plan stipulates the achievement of a strategic goal of the formation of a united state in terms of social, humanitarian, economic, environmental, security and spatial dimensions. Within the framework of the Plan for Strengthening the Integrating Role of Agglomeration and Large Cities, it is planned to develop documentation

for spatial development (urban planning documentation) of territorial communities, taking into account the risk of emergencies and compliance with the requirements of engineering and technical measures of civil protection. Local authorities (by consent), Ukrainian associations of local authorities (by consent), the Ministry of Regional Development, the SES, and development partners (by consent) are responsible for its implementation.

A general analysis of strategic documents at all levels is shown in the tables below.

Table 1. Analysis of national strategic documents' compliance with the Sendai Framework

Points in the table are awarded based on the following criteria:

From 0 to 5, where 0 is not taken into account at all (there is no mention of risks), from 1 to 3 — partially taken into account (there is a mention of risks, but not comprehensively), from 4 to 5 — fully taken into account (all risks are listed, there is a clear method for identifying them).

No	Document	Taking into account the priority of the SFDRR			
		1) Understanding disaster risk	2) Strengthening disaster risk governance to manage disaster risk	3) Investing in disaster risk reduction for resilience	4) Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction
1	2	3	4	5	6
1	National Security Strategy of Ukraine "Human Security is Security of Ukraine"	2	5	0	0
2	On the Basic Principles (Strategy) of the State Environmental Policy of Ukraine until 2030	5	4	0	0
3	Draft Strategy of Public Security and Civil Protection of Ukraine	4	5	0	0
4	Cybersecurity Strategy of Ukraine "Safe cyberspace is the Key to Successful Development of the Country"	3	4	0	0
5	National Strategy for creating a Barrier-free Space in Ukraine until 2030	3	4	0	0
6	Human Development Strategy	3	4	0	0
7	State Strategy for Regional Development for 2021–2027	4	4	5	3
8	Action plan for 2021–2023 to Implement the State Regional Development Strategy for 2021–2027	2	3	4	5
9	National Waste Management Plan in Ukraine until 2030	2	3	3	0
10	Strategy of Foreign Policy Activity of Ukraine	2	3	3	2
11	Strategic Defence Bulletin of Ukraine	0	2	0	0
12	Strategy for the Development of the Military and Industrial Complex of Ukraine	0	2	0	0

1	2	3	4	5	6
13	Economic Security Strategy of Ukraine until 2025	2	2	0	0
14	Concept of the State Target Program for the Development of the Agricultural Sector of the Economy until 2022 Concept of the Development of Rural Territories	2	2	0	0
15	Concept of the State Target Program for Fair Transformation of Coal Regions of Ukraine until 2030	2	2	0	0
16	National Environmental Action Plan until 2025	1	4	0	0
17	Concept of Risk Management of Anthropogenic and Natural Disasters	1	4	0	0
18	Strategy for Reforming the System of the State Emergency Service of Ukraine	2	4	0	0
19	Strategy for Public Administration Reform in Ukraine for 2022–2025	1	4	0	0
20	State Target Program for Airport Development until 2023	1	1	4	2
21	On Approval of the Strategy for Environmental Safety and Adaptation to Climate Change until 2030	4	3	0	0
22	Information Security Strategy	2	3	0	0
23	On the Biosafety and Biosecurity Strategy	2	2	0	0
24	Action plan for 2021–2023 for the implementation of the Innovation Development Strategy until 2030	1	2	4	0
25	Medium-Term Debt Management Strategy for 2021–2024	1	1	0	0
26	Strategy for the Development of Hydrometeorological Activities in Ukraine until 2030	2	3	1	0
27	Strategy for the Implementation of Digital Development, Digital Transformation and Digitalization of the Public Finance Management system until 2025 and approval of the Action Plan for its Implementation	2	3	3	0
28	Strategy for Integration of Internally Displaced Persons and Implementation of the Mid-Term Solutions as to Internal Displacement until 2024	2	3	1	0
29	Marine Environmental Strategy of Ukraine	3	4	0	0

1	2	3	4	5	6
30	Financial agreement “Program for the Restoration of Ukraine” between Ukraine and the European Investment Bank	3	3	4	5
31	State Forest Management Strategy until 2035	3	4	0	0
32	National Program for the Development of the Mineral Resource Base of Ukraine until 2030	4	4	2	0
33	National Strategy for Promoting Civil Society Development in Ukraine for 2021–2026	2	2	1	0
34	Energy Security Strategy	3	3	0	0
35	Strategy for the Development of the Justice System and Constitutional Justice for 2021–2023	2	2	0	0
36	National Human Rights Strategy	3	2	0	0
37	National Youth Strategy until 2030	2	2	0	0
38	Irrigation and Drainage Strategy in Ukraine until 2030	3	3	0	0
39	The Concept of State Environmental Monitoring Program	1	3	0	0
40	State Target Program for Medical, Physical Rehabilitation and Psychosocial Adaptation of Injured Participants of the Revolution of Dignity, Participants of the Anti-terrorist Operation and Persons who Took Part in the Implementation of Measures to Ensure National Security and Defence, Repel and Deter the Armed Aggression of the Russian Federation in Donetsk and Luhansk regions	3	2	0	0

Table 2. Analysis of regional development documents' compliance with the Sendai Framework

Points in the table are awarded based on the following criteria:

From 0 to 5, where 0 is not taken into account at all (there is no mention of risks), from 1 to 3 — partially taken into account (there is a mention of risks, but not comprehensively), from 4 to 5 — fully taken into account (all risks are listed, there is a clear method for identifying them).

No	Document	Taking into account the priority of the SFDRR			
		1) Understanding disaster risk	2) Strengthening disaster risk governance to manage disaster risk	3) Investing in disaster risk reduction for resilience	4) Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation and reconstruction
1	Program for Ensuring a Minimum Sufficient Level of Protection of the Population and Territory of the Oblast from Anthropogenic and Natural Disasters in 2021–2023	3	3	4	5
2	Development Strategy of the Donetsk oblast until 2027*	4	4	5	3
3	Development Strategy of the Luhansk oblast for 2021–2027	4	4	4	4
4	Economic Development Strategy of Donetsk and Luhansk oblasts until 2030	3	4	3	2
5	State Target Program for Recovery and Peacebuilding in the Eastern Regions of Ukraine	4	4	3	4
6	Action plan for organizing rebuilding of damaged (destroyed) social and transport facilities, housing stock and life support systems in the Donetsk and Luhansk oblast	1	1	4	4
7	Regional Program to Support the Agro-Industrial Complex and Development of Land Relations in the Donetsk oblast for 2021–2027	4	4	2	0
8	Regional Environmental Monitoring Program in Donetsk oblast for 2020–2024	1	3	0	0

* Important: Inconsistency of strategic objectives 3 and 4: safety and environmental safety.

Table 3. Analysis of local documents' compliance with the Sendai Framework

Points in the table are awarded based on the following criteria:

From 0 to 5, where 0 is not taken into account at all (there is no mention of risks), from 1 to 3 — partially taken into account (there is a mention of risks, but not comprehensively), from 4 to 5 — fully taken into account (all risks are listed, there is a clear method for identifying them).

No	Document	Taking into account the priority of the SFDRR			
		1) Understanding disaster risk	2) Strengthening disaster risk governance to manage disaster risk	3) Investing in disaster risk reduction for resilience	4) Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction
1	Hirske Civil-Military Administration Disaster Reduction Strategy	2	2	3	4
2	Strategy for the Development of Civil Protection of the Ocheretyne Civil-Military Administration	2	2	3	4
3	Strategy for Disaster Risk Reduction in the Svitlodarsk Territorial Community	2	2	3	4
4	Strategy for Disaster Risk Reduction in Popasna Territorial Community for 2021–2027	2	2	3	4
5	Strategy for Disaster Risk Reduction in Myrne Territorial Community	2	2	3	4
6	Development Strategy of Olhynka Community	2	2	3	4
7	Volnovakha Community Disaster Risk Reduction Strategy for 2021–2027	2	2	3	4
8	Sartana Community Disaster Risk Reduction Strategy	2	2	3	4

Appendix 2

PROPOSED STRUCTURE OF THE DISASTER RISK REDUCTION STRATEGY DOCUMENT

Information about potential risks.

Detailed description of the territory and facilities there.

Registers, monitorings, and cadastres.

Research on emergencies that happened and areas of development.

Formulation of risks taking into account:

- Functional purpose of the territory;
- Objects that are located and functioning;
- Obvious threats;
- Not obvious threats.

Formulation of emergency prevention measures taking into account:

- State and building regulations;
- Land legislation;
- The legislation on technogenic safety;
- The legislation on environmental safety;
- The legislation on civil security.

Monitoring and tracking the dynamics of risk occurrence.

Determining responsibilities.

LGs independently together with the emergency services created by them.

Regional CPS and other specialized agencies.

Oblast CPS and other specialized agencies.

National CPS and other specialized agencies.

Emergency response.

Calculating victims.

Methodology and procedure for assistance.

Recovery from an emergency.

Determining the procedure for making a decision on restoration.

Appendix 3

SOURCES OF INFORMATION THAT MUST BE ACCESSIBLE TO LOCAL GOVERNMENTS (LGS)

Information that is collected is obtained by local authorities	Sharing and generalization at the regional level	Sharing and generalization at the national level
1	2	3
Report on accidents of non-industrial nature for_____ 20__ a medical and preventive institution, a local executive authority, or a local authority ⁹⁹ (monthly until the 10th day of the following month)	Accounting for accidents and analysis of their causes are conducted by region state administrations (quarterly, annually). Council of Ministers of the Autonomous Republic of Crimea, oblast, Kyiv and Sevastopol City State Administrations conduct analysis of received reports.	It is formed in Annual reports on the main results of activities of the State Emergency Service of Ukraine. The last published report for 2020. ¹⁰⁰
Operational emergency information (daily)	SES of the oblast	SES of Ukraine
Radiation monitoring results Radar data Daily and monthly data on the regime and resources of land surface waters in rivers and reservoirs of Ukraine Agrometeorological conditions of cultivation and yield of major agricultural crops Daily and monthly monitoring of air pollution Climate Cadastre of Ukraine	Ukrainian Hydrometeorological Center	Ukrainian Hydrometeorological Center
Initial data and requirements required for the development and design of engineering measures	Department of engineering and technical measures and notification of the SES	Department of engineering and technical measures and notification of the SES

⁹⁹ Procedure for investigating and recording non-industrial accidents, <https://zakon.gov.ua/laws/show/270-2001-%D0%BF#Text>.

¹⁰⁰ Report on the main results of activities of the State Emergency Service of Ukraine in 2020, <https://www.kmu.gov.ua/storage/app/sites/1/17-civik-2018/zvit2020/zvit-2020-dsns.pdf>.

1	2	3
<p>Urban Development cadastre data, including geospatial data</p> <p>Data on issued permits for violation of landscaping objects</p> <p>Oblast territory planning schemes, region territory planning schemes, general plans of settlements, territory zoning plans, detailed territory plans, urban planning documentation of territorial communities, their projects (in accordance with their authority)</p> <p>Register of urban planning conditions and restrictions¹⁰¹</p> <p>Data on the location of municipal containers (by category), container sites, hazardous waste collection points, and secondary raw materials</p> <p>Data on the location of municipal waste management facilities, their area and revenue volumes</p> <p>Data on the location of municipal civil protection structures¹⁰²</p> <p>Data on the location of charging stations for electric transport¹⁰³</p>	<p>Detailed plans of territories, General plans, comprehensive plans for the development of the oblast</p> <p>Sanitary schemes for cleaning the oblast</p> <p>Information is posted selectively</p>	<p>Unified open data portal¹⁰⁴</p> <p>National Geospatial Data System¹⁰⁵</p> <p>Portal of the Unified State Electronic System in the construction sector¹⁰⁶</p>
<p>Geospatial data and metadata created at the expense of the local budget, international technical assistance and transferred to the local authority. All sets (types) of geospatial data</p>		<p>National Geospatial Data System¹⁰⁷</p>

¹⁰¹ From 24.02.2022 until the repeal of Martial Law, the Holder of the Electronic System decided to restrict the placement of information on the public portal! Users will be notified about the full resumption of the Portal later. Answers to questions about some restrictions in the operation of the public portal and the user's electronic cabinet are provided below, https://e-construction.gov.ua/mist_bud_cr.

¹⁰² Data on the location of municipal civil protection structures, <https://data.gov.ua/dataset/84e71021-e5d8-4685-a182-f3d0be642055>.

¹⁰³ Regulations on data sets to be made public in the form of open data, <https://zakon.rada.gov.ua/laws/show/835-2015-%D0%BF#Text>.

¹⁰⁴ Open Data Portal, <https://data.gov.ua/>.

¹⁰⁵ From 24.02.2022 until the repeal of Martial Law, the Holder of the Geoportal of the National Geospatial Data Infrastructure decided to restrict access to the public part of the system! Users will be notified about the full resumption of the Geoportal later. For official use of the Geoportal, NIGD producers and holders must undergo the registration and verification procedure, <https://nsdi.gov.ua/>.

¹⁰⁶ From 24.02.2022 until the repeal of Martial Law, the Holder of the Electronic System decided to restrict the placement of information on the public portal. Users will be notified about the full resumption of the Portal functionality later. Answers to questions about some restrictions in the operation of the public portal and the user's portal are provided below, https://e-construction.gov.ua/mist_bud_cr.

¹⁰⁷ From 24.02.2022 until the repeal of Martial Law, the Holder of the Geoportal of the National Geospatial Data Infrastructure decided to restrict access to the public part of the system! Users will be notified about the full resumption of the Geoportal later. For official use of the Geoportal, NIGD producers and holders must undergo the registration and verification procedure, <https://nsdi.gov.ua/>.

1	2	3
Information of the State Land Cadastre that is subject to publication on the territory of extension of the powers of such a state authority or local authorities in accordance with the Procedure for maintaining the State Land Cadastre	Information on the qualitative characteristics of land (in general and by individual contours), namely: elevation marks in the Baltic elevation system, terrain horizontal, slope steepness areas, terrain objects (ravines, cliffs, rocks, steeps, landslides, etc.), terrain cross-section height, slope steepness angles; belonging to the areas of certain soils, their agricultural production groups (subgroups) according to Appendix 5; humus content; results of agrochemical surveys; presence of negative signs (salinity, swampiness, erosion, landslides, landslips, karst formation, flooding, skeleton, contamination with radioactive, chemical or biological substances, degradation, low productivity, etc.), as well as documents on the basis of which the qualitative characteristics of land are determined (name, date and number of the decision to approve the relevant documentation, name of the body that adopted it (in the case when such documentation is approved), electronic copies of such documents	Public Cadastral Map ¹⁰⁸
Reports on strategic environmental assessment of state planning documents that determine the environmental conditions for the implementation of further activities within communities	Departments (divisions, offices) of ecology and natural resources of the oblast; Departments (divisions, offices) of Oblast Health Protection;	MEPNR and the Ministry of Health State Register for Environmental Impact Assessment of MEPNR
Conclusions from the Environmental Impact Assessment	Environmental information is any information in written, audiovisual, electronic or other form on: <ul style="list-style-type: none"> • the state of the natural environment or its objects (land, water, subsurface, atmospheric air, flora and fauna) and the levels of their pollution; • biological diversity and its components, including genetically modified organisms and their interaction with environmental objects; • sources, factors, materials, substances, products, energy, physical factors (noise, vibration, electromagnetic radiation, radiation) that affect or may affect the state of the natural environment and human health; 	National reports on the state of the natural environment in Ukraine ¹⁰⁹ identify that the prevention of natural and anthropogenic emergencies involves a number of measures: analysis and forecasting of environmental risks, which are based on the results of strategic environmental assessment, environmental impact assessment, as well as comprehensive monitoring of the state of the natural environment

¹⁰⁸ Public Cadastral Map, https://map.land.gov.ua/?cc=3461340.1719504707,6177585.367221659&z=6.5&l=kadaster&bl=ortho10k_all.

¹⁰⁹ National Report on the State of the Natural Environment in Ukraine in 2019, <https://bit.ly/3CcOFWU>.

1	2	3
	<ul style="list-style-type: none"> • the threat of occurrence and causes of environmental emergencies, the results of their elimination, recommendations on measures aimed at reducing their negative impact on natural objects and human health; • environmental forecasts, plans and programs, measures, including administrative ones, state environmental policy, legislation on environmental protection; • expenses related to the implementation of environmental protection measures at the expense of environmental protection funds, other sources of financing, economic analysis conducted in the decision-making process on issues related to the environment. 	
Notification of identification results for determining a potential hazard	Regional registers for accounting for dangerous objects	State (industry) registers of Ukraine for accounting of dangerous objects ^{110,111}
Passports of dangerous objects	Oblast SES	SES of Ukraine ¹¹²
Suggestions for improving the emergency response condition of business entities and territories and eliminating identified violations of the requirements for compliance with anthropogenic safety	Emergency services: <ul style="list-style-type: none"> • regional; • municipal; • facility 	State Emergency Services are services created by the central executive authority, which ensure the formation and implementation of state policy in the field of civil protection, and other central executive authorities ¹¹³

¹¹⁰ Methods for identifying potentially dangerous objects, <https://zakon.rada.gov.ua/laws/show/z0286-06#Text>.

¹¹¹ The Regulation on the State Register of Potentially Dangerous Objects was cancelled in December 2019, <https://zakon.rada.gov.ua/laws/show/1288-2002-%D0%BF#Text>.

¹¹² Regulations on certification of potentially dangerous objects, <https://zakon.rada.gov.ua/laws/show/z0062-01#Text>.

¹¹³ Article 24 of the Civil Protection Code, <https://zakon.rada.gov.ua/laws/show/5403-17#Text>.

1	2	3
<p>Dangerous facilities — high-risk facilities defined in accordance with the Law of Ukraine On High-risk Facilities, and other facilities that can create a real threat of anthropogenic emergencies not lower than at the local level defined in accordance with the Civil Protection Code of Ukraine;</p> <p>Dangerous areas:</p> <ul style="list-style-type: none"> • territories, where soil is contaminated more than the established maximum of permitted concentrations of dangerous substances for the environment due to violations of the normal conditions of operation of dangerous objects or accidents that occurred at dangerous objects, as a result of transport accidents with emissions of dangerous and harmful substances (fuel and lubricants, biological, chemical, radioactive, etc.); • territories which surface is disturbed due to earthquake, landslide, karst formation, erosion, flooding, mining, waterlogging, increased acidity or salts (degraded land); • zones of special regime of land use created around military facilities of the Armed Forces of Ukraine and other military formations established in accordance with the legislation of Ukraine to ensure the functioning of these facilities, the preservation of weapons, military equipment and other military property, as well as the protection of the population, economic facilities and the environment from the impact of emergencies, natural disasters and fires that may occur at these facilities. The boundaries of the dangerous territory are set taking into account the estimated area of possible damage. 	<p>Departments (departments) of Ecology and Natural resources of the OSA, SES, StateGeoCadastre</p>	<p>Environmental assessment reports of Ukraine</p> <p>Cadastres</p> <p>PDF monitoring</p> <p>Scientific-Research, Project-Design and Technological Institute of Micrography¹¹⁴</p> <p>Registers¹¹⁵</p> <p>DBN¹¹⁶ passports</p>
<p>Sanitary and hygienic monitoring data¹¹⁷</p>	<p>Laboratory centers of the Ministry of Health</p>	<p>Ministry of Health</p>

¹¹⁴ State Labour service, <https://dsp.gov.ua/vidomosti-pro-obyekty-pidvyshchenoi-nebezpeky/>.

¹¹⁵ State Register of potentially dangerous objects, <https://micrography.gov.ua/uk/regpdo>.

¹¹⁶ Passport of a potentially dangerous object, <https://micrography.gov.ua/uk/regpdo>.

¹¹⁷ Procedure for conducting state social and hygienic monitoring, <https://zakon.rada.gov.ua/laws/show/182-2006-%D0%BF#Text>.

1	2	3
Zoning of territories to disaster vulnerabilities ¹¹⁸	Regional SES ¹¹⁹ : together with central and local executive authorities, local authorities, enterprises, institutions, and organizations forecast the probability of occurrence of emergency situations, determine risk indicators and carry out zoning of the territory of Ukraine regarding the risk of occurrence of emergency situations	State Emergency Service of Ukraine ¹²⁰ : together with central and local executive authorities, local authorities, enterprises, institutions and organizations forecasts the probability of occurrence of emergency situations, determines risk indicators and performs zoning of the territory of Ukraine regarding the risk of occurrence of emergency situations
Unified measurable scale for evaluating indicators that characterize the state of environmental objects to make managerial decisions using toxic-mutagenic background ¹²¹	Laboratory centers of the Ministry of Health	Ministry of Health

¹¹⁸ Regulations on the State Emergency Service, <https://zakon.rada.gov.ua/laws/show/1052-2015-%D0%BF#Text>.
¹¹⁹ On approval of the Procedure for implementing natural and agricultural, ecological and economic, anti-erosion and other types of land zoning, <https://zakon.rada.gov.ua/laws/show/681-2004-%D0%BF#Text>.
¹²⁰ Composition and content of the Urban Development Cadastre DBN B.1.1-16:2013, <https://www.minregion.gov.ua/wp-content/uploads/2017/12/20.1.-DBN-B.1.1-162013.-Sklad-ta-zmist-mistobudivnogo-k.pdf>.
¹²¹ Methodological Recommendations for Inspection and Zoning of Territories Taking into Account the Degree of Influence of Anthropogenic Factors on the State of Environmental Objects using Cytogenetic Methods, <https://zakon.rada.gov.ua/rada/show/v0116282-07#Text>.