

## INTRODUCTION

*Relevance of the study.* The modern world is undergoing large-scale transformations in almost all areas of social relationships. Recently, climate change factors have become significantly more influential, new dangerous diseases have become widespread, the anthropogenic burden on the environment has increased, the Fourth Industrial Revolution is rapidly unfolding, and production is actively dematerializing. The global security environment features high turbulence and unpredictability, the international system of strategic stability is collapsing, competition between states is escalating, and emerging conflicts are increasingly difficult to resolve.

Strengthening national resilience can be an effective response to current challenges. Forming and implementing the relevant public policy direction better addresses threats of any origin and nature, including hybrid, to adapt to abrupt and unpredictable changes in the security environment, maintain sustainable functioning of the state before, during, and after crisis and quickly recover to balance optimally under the determined conditions. And in general – to endure (or even sometimes survive), and reduce losses in immensely complicated (crisis) circumstances that cannot be avoided.

These results can be achieved by providing the appropriate level of state and societal readiness to respond to a wide range of threats and dangers, timely detection of vulnerabilities that weaken security capabilities, to carry out adaptive management, effective crisis management and liaison at all levels, create necessary reserves and alternative strategies, plan measures and implement universal protocols of coordinated actions, disseminate necessary knowledge and establish reliable communications, rationally use resources, etc. Everything mentioned determines priority directions and tasks in forming the national resilience ensuring system, which still needs to be formed in Ukraine.

Today, Ukraine faces a range of threats of both external and internal origin. Hybrid threats, which are particularly difficult to detect, are a major concern. Their coordinated and simultaneous application in various fields is very dangerous for both the state and society. Countering these threats requires significant financial, technical, and human resources limited in most countries, especially in Ukraine, which has recently suffered significant material and human losses due to aggression by the Russian Federation.

Under modern conditions, the resilience capabilities of the state and society as complex systems need development and adaptive management. The national resilience ensuring system is intended to perform these functions. Some of its mechanisms are applied in Ukraine. However, their comprehensive implementation based on a systematic approach requires some changes in the elaboration of state security policy, improving organizational and legal support in the fields of national security and public administration, streamlining liaisons between existing and emerging nationwide systems (civil protection, countering terrorism, health care, social protection, cybersecurity, law enforcement, banking, etc.), providing proper cooperation and synergy of security and defense forces, state and local authorities, business and civil society, establishing effective coordination of their activities, and implementing principles of resilience in various fields, especially national security.

Building up a national resilience ensuring system will enable performance of adaptive management of the state and society's resilience in accordance with the determined performance benchmarks and criteria. What is crucial here, is not establishing new state bodies and institutions, but strengthening the resilience of the existing ones and forming reliable links between all national resilience providers. To do this, a new paradigm of thinking should be introduced, stereotypes should be overcome, security culture developed, society consolidated, joint countering to a wide range of threats ensured, and responsibility and mutual assistance in the society formed.

A national resilience ensuring model depends on state needs, the state's participation in certain international organizations and alliances, and other factors. Different countries have quite different experiences in this area. There is no universal model to meet everyone's needs. Mechanisms and practices that have been sufficiently effective in some countries may not meet the conditions and needs of others. Learning from the experiences of other countries and recommendations of leading international organizations will enable the implementation of best world practices with due account for national interests and specific developmental characteristics of the Ukrainian state and society. At the same time, proper scientific substantiation of the chosen conceptual framework, model, and mechanisms will help avoid mistakes while forming and implementing new complex projects. Creating a national resilience ensuring system is, in particular, such a project for Ukraine.

***Degree of scientific development of the topic.*** National resilience studies have an interdisciplinary nature and require an understanding of theoretical foundations in certain scientific directions.

Studies in *systems theory*, including complex systems (represented primarily by the works of R. Ackoff, L. von Bertalanffy, O. Bogdanov, J. van Gigch, E. Vinogray, W. Ashby, T. Parsons, N. Ovchinnikov, I. Prigozhyn, Yu. Sachkov, M. Setrov, W. Scott, I. Stengers, and A. Uyemov) are extremely important to understanding the concept of resilience and forming systematic mechanisms to ensure national resilience.

Aspects of the *interdisciplinary resilience concept* development and the new approach to scientific research of resilience thinking are covered in the works of the following scientists: T. Abel, W. Adger, K. Barrett, F. Berkes, M. Biggs, E. Boyd, K. Brown, F. Brand, W. Brauch, W. Galas, K. Jucks, J. Ebbesson, K. Eckerberg, A. Duit, S. Carpenter, J. Colding, M. Constan, T. Crane, C. Curtin, C. Lyon, K. Magis, M. Mitchell, D. Nelson, E. van Ness, A. Norström, O. Olsson, J. Parker, S. Polasky, S. Robinson, J. Rockström, H. Ross,

J. Stepp, H. Özdemir, G. Özkan, T. Hughes, J. Hodicky, C. Holling, C. Folke, R. DeFreese, M. Schlüter, M. Schoon, and others. The concept of resilience has gradually become an integral part of sustainability science.

Many researchers including J. Anderies, K. Wyche, W. Wolford, M. Walsh-Dilley, M. Cooper, P. Martin-Breen, F. Norris, B. Pfeferbaum, R. Pfeferbaum, S. Stevens, J. Walker have focused on the diversity and transformation of the resilience concept. The relevant research was also conducted by some scientific and public institutions, including the Community and Regional Resilience Institute [CARRI].

The works of such known worldwide scientists as M. Barnett, T. Balzacq, D. Bezvik, A. Bellamy, K. Buz, B. Buzan, T. Weiss, O. Waver, P. Williams, J. Duffield, H. Dexter, D. Joseph, R. Jones, B. Evans, A. McGrew, J. Reid, S. Tang, E. Thompson, R. Ullman, D. Held, J. Hertz, J. Hoogensen Gjørsv, L. Friedman, M. Foucault, D. Chandler, as well as such Ukrainian scientists as V. Abramov, O. Belov, V. Bogdanovich, V. Gorbulin, D. Dubov, B. Kaczynski, O. Kornievsky, V. Kosevtsov, V. Mandrageli, N. Nyzhnyk, O. Lytvynenko, A. Semenchenko, G. Sytnyk, and V. Smolyanyuk helped form and develop a separate scientific field of *security studies*.

Evolving conceptual approaches to national security, developing systems theory, and a separately forming resilience research direction let the resilience concept expand to the field of security research and form a *national resilience concept*. Among the researchers of this phenomenon are J. Anderies, P. Bourbeau, J. Joseph, B. Evans, C. Zebrowski, M. Cavelti, M. Kaufmann, K. Christensen, M. Cooper, P. Martin-Brin, G. Lasconjarias, V. Proag, J. Reid, J. Rensel, J. Walker, C. Fjäder, D. Chandler.

In recent years, the amount of applied research in various fields and directions of national resilience has significantly increased. In particular, this research highlights the experiences of different states in national resilience building, including particular details on the application of certain mechanisms of

ensuring national resilience in various spheres of activity (economic, energy, financial, etc.), on the interaction of various social relations actors. In this context, important studies have been conducted by famous scholars H. Bole, I. Weissmel-Manor, J. Woods, R. Donno, B. Atzold, D. Canetti, M. Kick, R. Klein, N. Cohen, R. Nicholls, J. Pollack, K. Rapaport, F. Tomalla, and L. Francar. Among the Ukrainian researchers, the scientific works of A. Boyko, D. Dubov, V. Kopchak, M. Samus, O. Sukhodolia, and O. Pokalchuk are of interest.

Many studies examine *the processes and outcomes assessment methodology* in complex systems, among which the works of J. van Gigch, P. Ratush, Y. Kharazishvili, and Ch. Churchman are worthy of note. Issues of *planning* (including strategic planning) feature prominently in studies of universal resilience mechanisms, represented in the works of well-known scientists G. Eisenkot, I. Ansoff, H. Bandhold, A. Butcher, P. Dixon, G. Kahn, M. Lindgen, G. Mintzberg, J. Ringland, J. Steiner, J. Tam, P. Schwartz, and G. Shiboni, as well as Ukrainian scholars V. Gorbulin, A. Kaczynski, and G. Sytnyk.

In general, according to Cavelti, Kaufmann, and Kristensen (2015), the number of publications on resilience registered in the international “Web of Science” database has increased significantly: from about 500 in 2003 to 3000 in 2013. According to estimates by Borisoglebsky, Naghshbandi, and Varga (2019), the number of such publications, selected only by certain search criteria, reached almost 350,000 in 2019. Currently, the Google search engine provides more than 170 million results for the “national resilience” query and more than 10 million results for the same query in Ukrainian.

At the same time, the issue of forming and functioning of the national resilience ensuring system is presented in the scientific literature only in fragments. The logic of choosing a national resilience ensuring model with due account for national interests and features of state and society development and

filling this model with appropriate systemic mechanisms with due account for the cyclical nature of key processes and influence factors, as well as issues of determining the effectiveness of universal and special mechanisms of ensuring national resilience, and forming the relevant state policy have been studied insufficiently. Besides, there is now a widespread trend to manipulate the term of resilience in the field of national security, when unsystematic measures in separate areas are proposed under the guise of providing national resilience.

The above-mentioned aspects require proper scientific studies, and the relevant theoretical knowledge should be enhanced due to their high practical value in modern conditions. That is why it is scientifically and practically expedient to formulate and solve the topical *scientific problem* of developing conceptual, methodological, instrumental, and applied components of providing national resilience in a high-turbulent and uncertain security environment with due account for state and society development features.

In Ukraine, national resilience studies have begun not so long ago and currently have no systemic nature. The Ukrainian expert community has no common understanding of key terms, objects, subjects, directions, processes, criteria, and indicators of providing national resilience, which have an interdisciplinary nature. Despite a number of tasks set by government strategic and program documents on creating a national resilience system, there is no proper scientific substantiation for the conceptual framework of this process, choosing a national resilience ensuring model, key tasks to be solved, etc.

Given the above, as well as taking into account the topicality of the national resilience issue in modern conditions, it is crucial to develop scientifically validated recommendations on establishing a national resilience ensuring system in Ukraine.

The *research object* was forming and implementing public policy in national security and resilience.

The *research subject* was forming a national resilience ensuring system in modern Ukraine.

The *research aim* was to determine a scientifically validated conceptual framework and optimal ways of providing national resilience in modern Ukraine with due account for successful foreign practices. This implied the practical implementation of the resilience concept in national security through establishing the national resilience ensuring system in Ukraine.

To achieve this aim, a number of *objectives* should have been accomplished. In particular, it was necessary to:

- determine the meaning of the interdisciplinary resilience concept, its characteristics, and manifestations;
- characterize peculiarities of implementing the resilience concept in national security;
- substantiate the expediency of a systems approach to national resilience;
- generalize the conceptual framework of forming and functioning of the national resilience ensuring system, including its liaison with the national security ensuring system;
- identify and characterize the basic principles, criteria, processes, and mechanisms for ensuring national resilience, which are interdisciplinary in nature;
- analyze the specifics of formulating state policy in national resilience;
- systematize and characterize key mechanisms for ensuring national resilience, including mechanisms of integrated risk and capability assessment, threat identification, vulnerability detection, adaptive management, a comprehensive multi-level organizational mechanism, etc.;
- characterize the logic of choosing the national resilience ensuring model and its key parameters;
- generalize foreign experiences in building national resilience from the perspective of identifying opportunities for its implementation in Ukraine;

- analyze how the approaches to resilience-building used by international organizations and individual states have changed in recent years. This analysis should help identify opportunities for expanding cooperation of these organizations and states with Ukraine and implementing relevant recommendations while forming and implementing the state policy in national security;

- characterize the current security environment of Ukraine and highlight its key trends in the context of determining the future national resilience ensuring system formation prospects;

- analyze the current status and summarize the key problems of the resilience in national security of Ukraine;

- substantiate the expediency of creating the national resilience ensuring system in Ukraine, to present the author's vision of its prospective model;

- develop recommendations for determining the national resilience conceptual framework in Ukraine, building key system mechanisms, forming the relevant state policy, improving national legislation, etc.

**Research methodology.** The study was divided into several stages. Initially, the scientific literature was reviewed and grouped according to the key research directions: the complex systems theory, resilience studies, and security studies. Given the need to describe and clarify the key system mechanisms and processes of providing national resilience, scientific works on risk assessment and management, identification of threats and vulnerabilities, formation and implementation of public policy, strategic planning, and public administration have been identified and analyzed.

Such methodological approaches and research methods as analysis and synthesis, systematic, system-structural, and structural-functional approaches, descending from abstract to concrete, induction and deduction, historical, logical, and other approaches used at this stage allowed the formation of a theoretical foundation for further research, namely: to determine a conceptual



framework for the formation and functioning of the national resilience ensuring system, the logic of building a multilevel integrated model and universal mechanisms of ensuring national resilience, and national resilience public policy development features. At the same time, the patterns identified allowed us to clarify the basic definitions, identify systemic elements and links, determine the national resilience ensuring cycle, characterize criteria, indicators, and national security resilience levels that have an interdisciplinary nature and can form a framework for developing specific resilience indicators in various fields.

In the next stage of this study, the best world practices in ensuring national resilience have been reviewed and analyzed. To this end, implemented project results, analytical materials, regulatory documents, and recommendations of leading international organizations and alliances, including UN, NATO, EU, and OSCE as well as international standards in security and resilience of states, communities, organizations, and enterprises have been examined. Besides, different states' experiences in providing national resilience, creating the relevant systems and universal mechanisms, including national risk assessment systems, multi-level organizational support mechanism, etc. have been studied. In order to determine the peculiarities of forming the national resilience ensuring model, special attention has been paid to the relevant experiences of Great Britain, the Netherlands, and New Zealand. Analytical reports, regulatory documents, and information references not only of these countries but also of the United States, Japan, Israel, Sweden, Norway, Estonia, and other countries have been examined in order to discover key characteristics of functioning of universal and some special system mechanisms.

In addition to the above-mentioned methodological approaches and research methods, observations, comparisons, and analogies were used at this stage. This helped identify successful world practices that can be implemented in Ukraine.

The security environment of Ukraine and national resilience providing state were analyzed at the next stage. To this end, official statistical materials, analytical reports of public authorities, Ukrainian regulatory acts, especially in national security, civil protection, organizing activities of public and local authorities, as well as scientific publications and expert assessments published during numerous communication events have been studied.

Based on the analysis results, the key problems in providing national resilience in Ukraine have been identified. Taking into account the obtained theoretical conclusions, successful world experience, and the features of functioning and development of the Ukrainian state, society, and national interests, recommendations on the conceptual framework and optimal model to ensure national resilience in current Ukrainian circumstances, ways to improve preparation and implementation of comprehensive strategic decisions, as well as on national security planning, establishing a unified legal framework, and on defining basic terms and basic mechanisms in the field of ensuring national resilience have been developed. In addition, recommendations on the development of a range of draft regulatory documents, including a draft decision of the National Security and Defense Council of Ukraine to establish a National Security Risk and Threat Assessment Center and improve the work of the Main Situational Center of Ukraine, as well as amendments to the Law of Ukraine “On National Security of Ukraine,” and the Civil Code of Ukraine have been formulated.

Therefore, the combination of theoretical and empirical research methods allowed not only to solve the determined scientific problems but also to form conclusions and significant practical recommendations for Ukraine.

The structure of the monograph was determined according to the above-mentioned logic of the research conducted during the preparation of this publication. The monograph consists of an introduction, five chapters followed

by findings, general conclusions that emerged from the research results, a glossary, a list of references, and annexes.

The monograph has been drawn up according to the research plan of the National Institute for Strategic Studies on the following topics: “Strategic trends in global development and their impact on national security of Ukraine” (state registration number 0113U001153, 2013), “Current threats and challenges to Ukraine’s national security in the context of globalization” (state registration number 0114U003203, 2014), “Improving the national security ensuring system of Ukraine” (state registration number 0115U003107, 2015), “Problems and ways of providing the national security of Ukraine in the face of increasing internal and external threats” (state registration number 0116U001471, 2016), “Countering separatism: conclusions for Ukraine” (state registration number 0117U4174, 2017), “Ensuring state resilience to national security threats” (state registration number 0118U003506, 2018), “Protection of national interests of Ukraine in the crisis of the security environment” (state registration number 0120U000260, 2020, state registration number 0120U000066, 2021).

The research results were validated during numerous scientific and scientific-practical conferences, workshops, and other communication events, including with international participation. Some research results have been practically implemented because the monograph’s author worked in the interagency national resilience buildup working group, established under the Commission for the Coordination of Euro-Atlantic Integration of Ukraine, participated in the elaboration of a range of draft regulatory documents of Ukraine, including a draft Concept of Support of the National Resilience System and prepared analytical reports of the National Institute for Strategic Studies to the annual Address of the President of Ukraine to the Verkhovna Rada of Ukraine “On the Internal and External Situation of Ukraine” and other analytical documents.

***Possible further research.*** Although national resilience studies are now performed quite actively, there are still possibilities for further research. Issues related to the integrated approach to sustainable development with due account for security and resilience, improving the risks and threats assessment methodology, as well as resilience in certain areas, building early warning systems and special mechanisms for providing national resilience, determining the limits of expedient decentralization in national security, developing adaptive management, and mechanisms of public-private partnership and international cooperation in national resilience should be scientifically and practically resolved.

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