https://doi.org/10.12958/1817-3772-2025-4(82)-59-67

UDC 332.122:338.142.6:338.246.8:338.48

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METHODOLOGICAL PROVISIONS FOR ASSESSING ECONOMIC AND ENVIRONMENTAL DAMAGE TO THE RESORT AND TOURISM AND RECREATION INDUSTRIES CAUSED BY THE RUSSIAN WAR AGAINST UKRAINE[1]

Introduction. In the sphere of functioning of the tourism, recreation and sanatorium and resort industries, a complex of economic, social, cultural and environmental factors intersect, under the influence of which not only added value and employment are formed, but also a platform for the rehabilitation and improvement of the population, the preservation of natural, in particular, medicinal resources and the development of local economic potentials, in the context of sustainable development in both urban [1] and rural [2] areas. Recent years have demonstrated that these industries are increasingly vulnerable to global challenges: climate change, the COVID-19 pandemic, and the full-scale Russian invasion starting in February 2022. The war has sharply exacerbated the crisis in these industries, leading to the destruction of infrastructure, loss of customer flows, reduced confidence in travel safety, and also dealt a blow to natural ecosystems – the basis of the recreational environment and resort areas. The industries were in a situation of economic stress, accompanied by such severe challenges as the halt/slowdown in the development of the tourism and recreation services market, the decline in the solvency of the population, the devastating consequences for resort and medical areas, the increase in the cost of logistics, and the collapse of aviation mobility, resulting in a significant increase in investment risks in all, including traditionally tourist/resort regions of the country.

In such conditions, a comprehensive assessment of economic and environmental damage to the sanatorium and resort and tourism and recreation industries is extremely important, focused on: determining the scale of destruction and losses; prioritizing the restoration of infrastructure and the environment; forming reasoned applications to international organizations for compensation from the aggressor country; laying the foundation for sustainable post-war development of resort and recreational areas.

From the standpoint of modern economic and ecological science, environmental damage from war is defined as an integral measure of the degradation of natural systems and the loss of their reproductive potential, expressed in cost or socio-economic indicators [3]. Such damages include losses of ecosystem services (water supply, microclimatic regulation, balneological properties), reduction of the healing potential of natural areas, degradation of water and mineral resources, as well as increased risks to public health [4].

In the Ukrainian realities of 2022–2025, as a result of Russian armed aggression, these losses are complex and primarily include three main interrelated groups of consequences:

– economic – destruction or damage to sanatoriums and resorts, hotels and other temporary accommodation facilities, loss of tourist flows, lost income, increased costs for restoration;

– ecological – environmental pollution and degradation of natural resources (forests, soils, waters, etc.), in particular natural therapeutic resources: mineral waters, therapeutic mud and brine, natural ecosystems that create therapeutic microclimatic conditions, etc.;

– socio-medical – reduction of opportunities for health improvement, rehabilitation and prevention, rehabilitation and recreation, increased psycho-emotional burden on the population.

Analysis of recent research and publications. In the scientific literature devoted to the functioning of the tourism, recreation and sanatorium and resort industries during and under the influence of the war, two main streams of research have been formed, important for the development of relevant methodological provisions for assessing damage: socio-economic and natural and eco-

[1] The research was carried out within the framework of the following scientific topics: «Restoration of the resort economy based on natural healing assets in the war and post-war periods» (0125U000027); «Comprehensive scientific research on ensuring spatial investment and innovative development of the Ukrainian Black Sea region» (0125U003488).

logical. The first – socio-economic – examines the impact of war and/or conflict on demand, income, infrastructure recovery and the labour market in the industry. Classic and review works on the crisis and recovery of tourism emphasize that political instability causes a sharp drop in tourist flows and long recovery periods; at the same time, reconstruction is often prolonged and uneven [5; 6]. The second – natural and ecological – examines the impact of armed and other destructive actions on natural resources and ecosystem services (including resources that provide a resort function: mineral waters, medicinal mud, beaches and coastal natural complexes, etc.). Research conducted by UNEP in the so-called former and current conflict zones, namely Iraq, Kosovo, Gaza, etc. [7–15], demonstrates multiplicative effects: destruction of infrastructure → emissions of toxic substances → degradation of wetlands and coastal ecosystems → long-term loss of recreational and other ecosystem services. For the formation of methodological provisions, this means the need to include cost estimates of both physical losses and lost ecosystem services (ESV, value transfer).

Ritchie (2019) [5] conducted a systematic review of research on risk, crises and disasters in the tourism sector; in particular, he summarized approaches and methods, from crisis communication to scenario modeling, and also substantiated an organizational approach to crisis management in tourism destinations. These conceptual tools can be the basis for further value conversion of natural, particularly recreational [16; 17] and medicinal resources. Faulkner (2001) [18] presents a modeling of the stages of crisis response and recovery roadmap construction, namely: rapid assessment → inventory → detailed calculations (at the organizational level this approach can be adapted to business management [19]). The authors of [20] propose a framework for post-conflict tourism recovery, consisting of phases, actors and funding sources, and which serves as a basis for further development of tourism sector recovery scenarios. A decision-making algorithm in the context of nature-based tourism change management is presented in [21].

In works [22–24], the issue of the impact of conflicts on tourism and related industries is considered through the prism of demand dynamics, primarily the loss of reservations and the displacement of tourist flows (in the context of the long-term damage and the heterogeneity of the recovery of destinations), as well as through the role of media and narratives in shaping travelers' attitudes towards the security factor. In particular, works analyzing tourism during the war in Ukraine emphasize the rapid decline in online searches and reservations after the beginning of the invasion and the gradual recovery of demand in conditions of local stabilization [22; 23], which proves the importance of including media analysis in the assessment of intangible losses in the tourism sector. Napierała and Pawlicz (2025) [24] and Hu and Wang (2025) [23] analyze the dynamics of hotel demand and international bookings after 2022 using empirical approaches. However, for such a quantitative identification of the speed of recovery, the data for the period 2022–2025 are insufficient to make long-term forecasts based on them.

Methods for assessing ecosystem losses are widely presented in the ecological and economic literature, including: value transfer methods [25], global ecosystem valuations [26; 27] and SEEA/TEEB technical approaches [28]. The literature on the assessment of recreational services emphasizes the need to combine direct cost methods (replacement/restoration cost) and service valuation methods (travel cost, contingent valuation) for adequate conversion of losses into monetary form [25; 26; 29]. In particular, Brander et al. (2013) [25], based on the value transfer method, provides practical recommendations for using existing coefficients for assessing ecosystem services in cases where primary estimates are not available. This is especially useful for balneological resources, where local CVM / TCM studies are almost not conducted. Markandya et al. (2022) [28], exploring the SEEA methodology, offer technical approaches for incorporating ecosystem assets into national accounts, including methods for discounted valuation of long-term services. De Groot et al. (2012) [26] carry out a large-scale assessment of the value of ecosystems on a global scale, identifying their high social contribution.

The above actualizes and increases the importance of forming within the framework of this study scientific and methodological provisions for assessing losses to the sanatorium-resort and tourist-recreational industries as a result of the war, aimed primarily at eliminating the problem of the current lack of a comprehensive approach to calculations that can simultaneously take into account the economic, environmental and social components. The development of a comprehensive approach to assessing economic and environmental damage to the sanatorium-resort and tourist-recreational industries as a result of the war is not only an urgent scientific task, but also a prerequisite for restoring the natural resource potential of Ukraine, strengthening its international image as an environmentally responsible state and forming a new model of sustainable post-war development.

The purpose of the research is to substantiate methodological provisions, in particular principles and methods, as well as formal provisions developed on their basis for assessing economic and environmental damage to the resort and tourism and recreation industries as a result of the Russian war against Ukraine. The analysis and generalization of relevant methods were carried out in relation to the types of damage and a wide range of economic, natural and environmental and social objects of influence.

Presentation of main research material. The following fundamental principles underlie the formation of methodological provisions:

– comprehensiveness: environmental damage is assessed within each component of the provisions, taking into account the avoidance of two-component double counting;

– spatial differentiation: losses are calculated at the level of individual objects, in order to focus attention on local «hot spots» and/or territories – to justify the corresponding transformations in regional policy;

– temporal dynamics: the assessment takes into account the impact of the long-term nature of the war on the dynamics of changes in losses, and the duration of the recovery period;

– documentation of sources and metadata: if possible, along with each figure, act or sample, it is necessary to record metadata (date, place, performer, level of trust);

– targeting to state policy: the assessment results are «mounted» into state recovery programs and justification of compensation from the perpetrators.

Based on these principles, the following general provisions of the methodology for economic and environmental losses to the resort and tourism and recreation industries as a result of the Russian war against Ukraine (hereinafter referred to as the Methodology) have been formed:

– Methodology establishes a mechanism for calculating the amount of damage and losses caused to the resort and tourism and recreation industries of Ukraine as a result of the armed aggression of the Russian Federation;

– Losses in the specified industries include damage caused to the state, territorial communities, as well as economic losses to owners and users of recreational, tourist and resort facilities (sanatoriums, boarding houses, children's camps, hotels, tourist bases, beaches, embankments, medical and health complexes, natural recreational areas and medical resources, etc.).

– The methodology is used to calculate damage and losses arising from:

- destruction or damage to buildings and structures of resort, tourist and recreational infrastructure;

- loss of the possibility of exploiting recreational and health-improving lands;

- interruption of economic activity in the field of tourism and recreation;

- destruction or pollution of natural medical and recreational resources (mineral springs, therapeutic mud, beaches, parks, green areas, etc.);

- lost profits due to the cessation of the functioning of tourist flows and health-improving and recreational services.

– The methodology is based on a comparative assessment of the results of the recreational and tourism industry (obtained during the period of the Russian invasion and recovery after it – compared to the period of similar duration before the invasion) based on the principle of taking into account the consumer spending of each visitor to the country (region), regardless of the motivation for the trip, since each visitor spends certain amounts of money during his stay in the country (region), consuming goods and services from various sectors of the economy, which affects the economy and social sphere of the country (region) as a whole.

The procedure for determining losses to the resort and tourism and recreation industries as a result of the Russian invasion of Ukraine is as follows:

– According to the Procedure for Determining Damage and Losses Caused to Ukraine as a Result of the Armed Aggression of the Russian Federation (namely: the direction «economic losses of enterprises» includes losses of enterprises of all forms of ownership as a result of the destruction and damage of their property, as well as lost profits from the impossibility or obstacles in conducting economic activities (clause 14); the direction «damage caused to land resources» includes damage caused by pollution and littering of land resources, in particular recreational and/or health-improving purposes (clause 16); the direction «losses of subsoil», which includes losses of subsoil caused by their unauthorized use, as well as environmental damage caused to the surrounding natural environment (clause 8) etc.), the relevant total damage to the resort and tourism and recreation industries is as follows (by analogy, but without a fundamental division into economic and environmental components, with the materials of work [30]):

- the amount of damage to the sanatorium-resort and tourist-recreational industries as a result of the military invasion;

- the amount of damage from the decrease in the volume of tourist consumption (loss of economic benefits of tourism) as a result of the military invasion;

- the amount of the unobtained socio-economic effect from the recovery / rehabilitation of vacationers in various types of recreational facilities as a result of the military invasion;

- the amount of damage to the sanatorium-resort and tourist-recreational industries from the consequences of military emergencies and / or other emergencies caused by the Russian invasion;

- the amount of damage from the contamination of health and / or recreational lands as a result of the military invasion;

- the amount of damage caused as a result of the military invasion of health and / or recreational land plots;

- the amount of damage caused as a result of using the land plot for purposes other than its intended purpose, violation of the regime, standards and rules for land use due to military invasion;

- the amount of damage established due to the unauthorized use of medicinal mud and other natural healing resources due to military invasion.

– Ukraine, its sanatorium and resort and tourism and recreation industries and recreational and tourism business entities have the right to compensation for lost profits, as well as losses due to the violation of recreational and health-improving lands, during the period of invasion and recovery after it, necessary to restore the confidence of visitors and vacationers in the safety of their stay and the quality of the recreational environment within the territories of Ukrainian tourist destinations.

– The process of assessing the damage to the sanatorium-resort and tourism-recreational industries as a result of the Russian invasion of Ukraine:

- organization of assessment work and formation of a team of specialists:

- formation of a working group (multidisciplinary team of specialists), which includes: chief analyst (coordinator), (hydro)geologists, ecologists, civil engineers, economists, financiers, sociologists/marketers (to assess image losses), lawyers (to resolve legal issues of ownership/compensation), sappers - as needed;

- formation of a work plan (according to the Gantt chart), which includes performers, sources of resources and timeframes for: field and laboratory work, collection and processing of information data, the process of assessing the damage and preparing the report;

- establishing compliance with quality standards, namely: sampling standards (in accordance with ISO/DSTU), individual components of the calculation methodology (in accordance with existing national and international methodologies), reporting format (Excel, GIS templates); taking into account the possibility of correlation with the reporting of the UNDP Ukraine RDNA – Rapid Damage and Needs Assessment and the UNHCR Rapid Environmental Assessment;

- selection (combination) of damage assessment methods:

Qualitative methods – are used mainly at the first stage of the assessment, for data interpretation and selection of priorities, namely:

- expert assessments (Delphi / panel) – with a shortage of empirical data for a quick assessment of priorities and weights;

- scenario analysis – for modeling uncertainty (optimistic / base / pessimistic scenarios);

- SWOT / Stakeholder interviews / Media analysis – for assessing image, social risks, taking measures.

Quantitative methods – mainly (according to OECD / World Bank assessment practice) the following are used:

- Replacement / Restoration Cost Method (RCM) – method of direct costs for restoration of infrastructure facilities;

- Discounted Loss / Present Value (DLM) – method of discounted lost/unearned income;

- Ecosystem Services Valuation (ESV) – methods for assessing the value of ecosystem, primarily recreational services (transportation cost method TCM, Travel Cost Method – economic method for assessing recreational resources based on time and money spent on travel; contingent valuation method CVM, Contingent Valuation Method – survey method for assessing people's willingness to pay for certain services / resources);

- integral indices – if normalization and weighted aggregation are necessary within the framework of comparative assessment of losses within different facilities / territories;

- statistical / econometric models - if relevant Big Data is available with further modeling / forecasting of impacts / losses: with the possible use of both the Dynamic Linear Model (DLM) for forecasting time series taking into account changes in parameters over time; and based on the TCM method.

Descriptions of groups of indicators for assessing losses due to the destruction of recreational, tourist and sanatorium-resort infrastructure include:

- physical destruction: this group reflects the scale of direct damage to the material base of objects. This includes the areas of destroyed and damaged buildings, the number of completely lost buildings. The indicators are the basis for further cost calculations;

- cost losses: characterize the economic equivalent of physical damage. This is the cost of restoring buildings, equipment, engineering networks, as well as generalized direct material damage. The methods of replacement cost and estimated assessment are used;

- indirect losses: include losses from a decrease in tourist flow, unearned income from services, as well as the multiplier effect in related industries (transport, trade, catering). They allow taking into account socio-economic consequences that are not limited to the infrastructure itself;

- ecological losses: reflect the degradation of natural healing resources (mineral and thermal waters, mud, ozokerite, brine of estuaries and lakes, marine ecosystems). They are estimated as the lost volume of the resource multiplied by its cost or replacement price;

- social consequences: focus on the human dimension of losses: job losses, socio-economic losses due to unemployment, time to restore the facility, level of social security. They help assess the consequences of war for the community and industry workers;

- integral assessments: aimed at a comprehensive generalized characterization of losses. They include the integral index, the efficiency and safety coefficient of the facility, the level of confidence in the assessment, as well as the renewable potential of natural resources. They provide the ability to compare different facilities and regions.

In general, the practical application of these assessment methods is as follows: RCM and MVM are appropriate for recording direct losses within insurance reports; DLM and SA are used for long-term forecasting of losses (5–10 years) taking into account the recovery time; SPM, EEM, ESV are the most important for the environmental component, especially for medical and balneological resources; CVM and SER reflect the social dimension of losses, which is often ignored in economic assessment; IIM is recommended for state strategic assessments of the impact of war on the regional development of the resort and recreational sector.

The generalization in Table 1 is also based on the experience of applying the above methods [7–15], namely:

Table 1. **Methods for assessing environmental and economic damage to the resort and tourism and recreation industries caused by the war**

Type of damage	Main objects of impact	Recommended assessment methods	Summary of application
Direct material losses	Sanatoriums, boarding houses, hotels, medical buildings, wells, beach and transport infrastructure	Replacement cost method (RCM); Market value method (MVM)	Calculation of the cost of restoration or replacement of damaged buildings, structures, equipment. Determination of the difference between the pre-war and post-war market value of assets
Indirect economic losses	Tourist flows, income from services, employment, seasonal businesses	Discounted loss method (DLM); Scenario analysis method (SA)	Estimated lost income due to the suspension of activities, loss of customers or tourists. Modeled recovery scenarios taking into account the duration of hostilities
Losses of recreational potential	Beaches, thermal zones, mineral springs, landscapes, parks	Travel cost method (TCM); Hedonic pricing method (HPM)	Determined the decline in the attractiveness of territories and tourists' willingness to pay for visits. Analyzed the impact of deteriorating environmental conditions on prices for recreational real estate
Ecological losses to natural healing resources	Mineral, thermal waters, therapeutic mud, estuary brine, sea water, ozokerite	Shadow Price Method (SPM); Ecosystem Services Valuation Method (ESV)	Valuation of degradation of natural resources due to pollution, destruction of wells, reduction in the quality of therapeutic waters and mud, loss of ecosystem functions
Socio-economic losses	Employment, community welfare, loss of recreational opportunities for the population	Contingent Valuation Method (CVM); Socio-Economic Ranking Method (SER)	The willingness of the population to pay for the restoration of recreational services or their loss is determined. A ranking of regions is formed by the level of socio-economic consequences
Integral ecological and economic losses	Collective damage to the regional economy, nature and society	Integral Index Method (IIM); Scenario Analysis (SA); Expert Score Method	A comprehensive integration of different types of losses by weight coefficients. Can be used for strategic planning of the restoration of the industry

Source: created by the authors based on [18; 31–39].

Croatia: in the 1990s – military actions during the collapse of Yugoslavia, which had consequences both within the coastal zones (Adriatic) and inland ecosystems. In the post-war period, assessments of environmental load (including the impact of tourism) were carried out by international organizations and the World Bank as part of the analysis of the «cost of environmental degradation» (CoED).

– Methods used: Replacement Cost (RCM) – to determine the costs required to restore coastal defense infrastructure, treatment plants and damaged facilities. (Practically used in the damage inventory of the 1990s). In the part related to tourism, the authors calculated the costs of cleaning (wastewater, marine litter) and losses for the tourism sector. Economic impact assessment on the tourism sector (DLM for lost income; TCM / HPM for assessing recreational losses) – in studies on the impact of environmental degradation on tourism, discounted lost income and changes in real estate prices were used.

– Technical approaches (field/laboratory) used: field inventory of coastal areas and features, satellite/aerial imagery to map erosion and shoreline changes; survey of treatment facilities and calculation of waste volumes, laboratory tests of water quality (TDS, petroleum products, bacteria).

Bosnia and Herzegovina: Military operations 1992–1995. What was affected: Sava river basin, coastal areas, natural parks, landfills, infrastructure.

– Methods: Field inventory, GIS maps of relief and landscape changes; some technical assessments of restoration costs (RCM). Multidisciplinary environmental peacebuilding projects – approaches that combine environmental assessment with water management restoration.

Kosovo: 1999 military operations: industrial sites were primarily affected; munitions residues, including depleted uranium; soil and water contamination.

– Field inspections and rapid inventory (Rapid Environmental Assessment, UNEP post-conflict environmental assessment) were used: mapping of hot spots, sampling of soil/water/sediments; prioritization by health risk. RCM / technical cost assessment of cleanup – estimates of hazardous materials elimination and remediation. Chemical/radiological laboratory tests; in the case of DU – specific radiation measurements and risk assessments.

Iraq: after the 2003 war: oil fields/fires, industrial infrastructure damaged; soil and water contamination; destruction of urban infrastructure.

– Methods: desk studies combined with Rapid field assessments (a combination of remote sensing data and random field sampling). Cleanup and restoration cost estimation (RCM) – direct cost estimates for oil spill cleanup, soil remediation, water treatment. Risk-based approaches (health risk assessment).

Ukraine: Kakhovka Reservoir Ecocide 2023, massive infrastructure destruction, Kakhovka Dam (flooding/erosion), water/sediment pollution, degradation of therapeutic estuaries/beaches.

– Methods used/recommended: RDNA / World Bank – comprehensive assessments of direct losses and restoration needs, combining cost estimates (RCM approaches similar to building/network restoration) and scenario/discount approaches to assess indirect losses and long-term needs. UNEP Rapid Environmental

Assessment (Kakhovka breach) – field measurements, water/sediment sampling, risk assessment for ecosystems and people; recommendations for priority remediation solutions.

The final stage of the above Procedure is the formation of a reporting document based on the assessment results. By analogy with the structure and content of the UNDP RDNA reports, the final stage of the assessment is:

– Formation of a report document, which includes: a summary with key assessment results, methodology (data, formulas, assumptions), results (tables of direct and indirect environmental and economic losses), scenarios and uncertainty analysis, recommendations on the priority of measures, annexes (primary and intermediate data, acts, laboratory punctures).

– In the case of calculating integral indicators, the reporting document includes: rating tables of regions / facilities and detailed action plans: urgent measures for security, demining, temporary engineering solutions; medium- and long-term measures for reconstruction and restoration.

Conclusions. As a result of the study, methodological provisions were developed for assessing the economic and environmental damage caused to the resort and tourism and recreation sectors of Ukraine caused by Russian armed aggression during 2022–2025. The study integrates the provisions of national and international regulatory documents regulating the procedure for determining damage, assessing the ecological and economic consequences of military actions, and monitoring the state of natural, in particular, medical resources within health and recreation areas and tourist facilities. A comprehensive approach to assessing the economic and environmental damage to the resort and tourism and recreation sectors as a result of the Russian war against Ukraine was substantiated; the proposed procedure combines a rigorous quantitative basis (RCM, DLM, ESV) with qualitative procedures (expert assessments, scenarios, social surveys), which corresponds to international practices of UNEP, RDNA, SEEA, and OECD.

Practical orientation of the obtained results: methodological provisions are consistent with the approaches used to assess damage to resorts, tourism and the environment in international practice; the proposed assessment approaches are universal in nature and can be used: in state recovery programs – for planning measures for the reconstruction of resort regions and the restoration of the recreational / health environment and individual natural, in particular, medical resources, primarily within the framework of the Plan of Ukraine for the Ukraine Facility; for the formation of requests for compensation for damage – when preparing reports to international organizations; for investment analysis – determining the potential for recovery and return on investment in the resort and tourism and recreation industries in the post-war period; for scientific purposes – creating a database of damages, predicting the consequences of potential aggressive anthropogenic activity.

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Надійшла до редакції 13.11.2025 р.
Прийнята до друку 16.12.2025 р.

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Received: 13.11.2025
Accepted: 16.12.2025

Petrushenko M., Semenov O. Methodological provisions for assessing economic and environmental damage to the resort and tourism and recreation industries caused by the Russian war against Ukraine

Methodological provisions have been developed for assessing the economic and environmental damage caused to the resort and tourism and recreation sectors of Ukraine caused by Russian armed aggression during 2022–2025. The study integrates the provisions of national and international regulatory documents regulating the procedure for determining damage, assessing the ecological and economic consequences of military actions within health and recreation areas and tourist facilities. A comprehensive approach to assessing the economic and environmental damage to the resort and tourism and recreation sectors as a result of the Russian war against Ukraine has been substantiated; the proposed procedure combines a rigorous quantitative basis (RCM, DLM, ESV) with qualitative procedures (expert assessments, scenarios, social surveys), which corresponds to international practices of UNEP, RDNA, SEEA and OECD.

Keywords: assessment methodology, ecological and economic damage, sanatorium and resort industry, recreational and tourism industry, Ukraine, Russian war.

Петрушенко М. М., Семенов О. С. Методологічні положення оцінювання економіко-екологічних збитків курортній і туристично-рекреаційній галузям, спричинених російською війною проти України

У результаті проведеного дослідження розроблено методологічні положення щодо оцінювання економіко-екологічних збитків, завданих курортній та туристично-рекреаційній галузям України, спричинених російською збройною агресією протягом 2022–2025 рр. У дослідженні інтегровано положення національних і міжнародних нормативних документів, що регламентують порядок визначення шкоди, оцінку еколого-економічних наслідків воєнних дій і моніторинг стану природних зокрема лікувальних ресурсів у межах оздоровчо-рекреаційних територій і туристичних об’єктів. Обгрунтовано комплексний підхід до оцінювання економіко-екологічних збитків курортній і туристично-рекреаційній галузям унаслідок російської війни проти України; запропонований порядок поєднує жорстку кількісну базу (RCM, DLM, ESV) із якісними процедурами (експертні оцінки, сценарії, соціальні опитування), що відповідає міжнародним практикам UNEP, RDNA, SEEA та OECD. Практична спрямованість отриманих результатів: методологічні положення узгоджуються з підходами, які застосовувалися для оцінювання збитків курортам, туризму та довкіллю в міжнародній практиці; запропоновані підходи оцінювання мають універсальний характер і можуть бути використані: в державних програмах відновлення – для планування заходів із реконструкції курортних регіонів і відновлення рекреаційного / оздоровчого середовища та окремих природних, зокрема лікувальних ресурсів, передусім у межах Плану України для Ukraine Facility; для формування запитів на компенсації збитків – при підготовці звітів до міжнародних організацій; для інвестиційного аналізу – визначення потенціалу відновлення та окупності вкладень у курортну і туристично-рекреаційну галузі в післявоєнний період; для наукових цілей – створення бази даних збитків, прогнозування наслідків потенційної агресивної антропогенної діяльності.

Ключові слова: методологія оцінювання, еколого-економічні збитки, санаторно-курортна галузь, рекреаційно-туристична галузь, Україна, російська війна.