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International experience in managing the environmentally safe development of tourism and recreational activities: Models, trends, and assessment tools

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Abstract. At the present stage, the environmentally safe development of tourism and recreational activities in Ukraine is gaining strategic importance as a priority area of sustainable development. It promotes the rational use of natural areas, contributes to the formation of environmental awareness, and requires systematic regulation to prevent environmental degradation. The aim of this study was to generalise international experience in managing the environmentally safe development of tourism and recreational activities and to establish an analytical framework for its adaptation to Ukrainian conditions. The study systematises international management approaches and identifies eight typological models of ecotourism development characterised by institutional architecture, the role of local communities, visitor flow management instruments, the application of environmental standards, and collaborative governance mechanisms. Based on a comparative case-study analysis, the key trends were identified, including the

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intensification of environmental certification, the expansion of community-based tourism, the digitalisation of visitor management in protected areas, and the development of low-impact tourism practices. Particular attention was paid to rankings and composite indices as instruments for enhancing national competitiveness in international tourism and as elements of contemporary geopolitical positioning. The structure of the Global Wildlife Travel Index was analysed, and the positions of Australia, Canada, the United States, and Ukraine were compared using selected indicators and overall index values. The study revealed several methodological limitations of the index, including its sensitivity to indicator selection and aggregation procedures, which reduces the validity of final assessments and necessitates its critical application in scientific research. The findings substantiate the need for further refinement of tourism sustainability indices in order to improve the transparency, reproducibility, and comparability of assessment results and to enhance their applicability in evidence-based tourism policy and environmental management

Keywords: ecotourism; nature-based tourism; environmentally safe tourism practices; international experience; models of environmentally safe tourism and recreational development; tourism indices and rankings

Introduction

Several major trends can be identified in the contemporary tourism industry, among which the orientation toward sustainability and environmental balance has become particularly significant. While the emergence of nature-based tourism was initially driven by the intensification of the environmental crisis, ecotourism itself has gradually evolved into a mass phenomenon and is increasingly regarded as a potential risk factor for environmental safety, ecosystem stability, and the functioning of natural complexes. Consequently, countries that occupy leading positions in the global tourism sector in terms of tourist arrivals and revenues, as well as recognised leaders in ecotourism development, have actively introduced systematic approaches to tourism governance. These approaches are based on the principles of consistency, effectiveness, and environmental responsibility aimed at ensuring an adequate level of environmental safety within tourist destinations.

According to the findings of K. Matiyiv *et al.* (2022), the tourism sector is gradually undergoing a process of "greening", reflected in increasing attention to the environmental characteristics of resorts and destinations, the conservation of natural landscapes, and the protection of biodiversity. As a result, a growing number of tourists prefer destinations located in natural areas that have experienced minimal anthropogenic disturbance and have retained their ecological authenticity. At the current stage of tourism industry transformation, a persistent global shift toward sustainability, environmentalisation, and responsible natural resource use can be observed, as confirmed by N.V. Anistratenko & A.V. Malchenko (2022). In contemporary literature, the focus is moving away from declarative discussions of "green tourism" toward the analysis of tourism governance as a system of managerial rationalities, institutional norms, and decision-making practices that directly determine the environmental quality of tourism and recreational development. Consequently, the environmentally safe development of tourism and recreational activities is increasingly viewed as a function of governance effectiveness and the capacity of institutions to establish the "rules of the game" for visitors and stakeholders, as emphasised by R. Sharpley *et al.* (2023) and A. Lundén *et al.* (2025).

As noted by M. Rogowski *et al.* (2025), the paradigm of tourism environmentalisation does not eliminate one of the key contemporary contradictions: nature-based travel, despite being positioned as environmentally acceptable, may generate increasing pressure on ecosystems precisely because of the growing popularity of natural destinations. Empirical studies by Z.A. Atamanchuk *et al.* (2020) and M. Medina-Chavarría *et al.* (2024) demonstrate that the concentration of tourist flows within national parks and other environmentally sensitive areas intensifies manifestations of overtourism, resulting in spatial and temporal unevenness of visitation, user conflicts, and localised environmental degradation. In this context, environmentally safe tourism development should not be interpreted as an inherently "ecological" sector but rather as a socio-ecological-economic system in which environmental outcomes depend on governance regimes and the quality of regulation. A. Lundén *et al.* (2025) and M. Rogowski *et al.* (2025) emphasise that sustainability cannot be automatically guaranteed even within protected areas, since visitor management is influenced by institutional constraints, evolving governance rationalities, and tensions between nature conservation objectives and commercial interests. Moreover, contemporary international discussions increasingly extend beyond the concept of sustainable tourism toward the notion of regenerative tourism, which focuses not only on minimising impacts but also on restoring natural and social systems. J. Iddawala & D. Lee (2026) argue that the regenerative approach becomes particularly relevant during periods of systemic crisis, as it prioritises the restoration of territorial adaptive capacity, community engagement, and long-term ecosystem value.

Accordingly, visitor management instruments – such as zoning, seasonality control, mobility regulation, and route management – are gaining strategic importance, enabling natural areas to be transformed from mere "objects of consumption" into managed systems of recreational use. Lessons learned from the post-pandemic period further demonstrate that changes in mobility patterns and abrupt shifts in visitor behaviour require adaptive governance solutions based on flow analysis and scenario planning, as noted by A. Mandić *et al.* (2025). Thus, the

environmentally safe development of tourism and recreational activities should be understood as an institutionally supported process that integrates environmental constraints, visitor flow management, and the financial and organisational capacity necessary to maintain conservation regimes. Emerging scientific approaches also highlight the importance of integrating ecosystem integrity, visitation dynamics, and financing mechanisms to enhance the resilience of nature-based tourism systems. The aim of this study was to systematise international models of governance for the environmentally safe development of tourism and recreational activities, evaluate contemporary instruments for sustainable tourism management, and substantiate approaches to their adaptation within the Ukrainian context.

Materials and Methods

The object of the study comprised the processes of development and governance regulation of ecotourism within global and national tourism systems, as well as the mechanisms for the formation and application of international rankings and composite indices used to assess the ecological and tourism potential of countries. Ranking and indexing instruments were considered as analytical and managerial resources that not only reflect the current state of ecotourism but also influence tourism policy priorities, territorial competitiveness, and the international positioning of destinations. The methodological framework was based on the principles of interdisciplinarity, systems thinking, and evidence-based research. The study employed methods of analysis and synthesis, comparative and structural-functional approaches, statistical processing of data from the Global Wildlife Travel Index (2019), case-study analysis, and critical analysis to identify governance practices, methodological limitations of tourism indices, and their potential application in strategic planning. This approach enabled the interpretation of tourism indices as instruments of evidence-based tourism policy that support the measurement, interpretation, and justification of management decisions using internationally comparable data.

To assess the role of US federal agencies in ensuring the environmentally safe development of tourism, an expert evaluation method was applied. This approach was selected due to the absence of standardised quantitative indicators that would allow for the direct measurement of the contribution of individual institutions to regulatory, environmental protection, educational, monitoring, and infrastructure-related functions. The expert panel consisted of 12 specialists who met at least two of the following criteria: possession of an academic degree in tourism, ecology, environmental management, or public administration; a minimum of five years of research or professional experience in the management of protected areas, sustainable tourism, or environmental policy; and at least three scientific publications on sustainable tourism or environmental management published during 2020-2025. The evaluation was conducted individually. Each expert was asked to assess the intensity with which a specific institution performs a particular function using a three-level scale:

- High level (H) – the function represents one of the institution's core responsibilities and directly determines its principal management outcomes;
- Medium level (M) – the function is implemented systematically but plays a supporting or partially specialised role;
- Low level (L) – the function is performed indirectly or does not belong to the institution's primary areas of activity.

To ensure the reproducibility of results, qualitative assessments were quantified by assigning numerical values: H = 3 points, M = 2 points, and L = 1 point. For each "institution-function" combination, the arithmetic mean of expert scores was calculated. The final category was determined according to the following intervals: 2.50-3.00 points – High level (H); 1.50-2.49 points – Medium level (M); 1.00-1.49 points – Low level (L).

The consistency of expert judgments was assessed using Kendall's coefficient of concordance (W). A value of W greater than 0.70 was interpreted as indicating a high level of agreement among experts and, consequently, the reliability of the obtained results. The proposed approach enables comparative analysis of institutional models for environmentally safe tourism governance and ensures the reproducibility of the assessment procedure for other countries and tourism governance systems. For the analysis of tourism and recreational activities under wartime threats, the concept of wartime adaptive tourism is proposed. This concept is defined as the ability of a tourism system to maintain functionality, ensure visitor safety, and adapt to crisis conditions. The adaptability of tourism destinations can be assessed using an integrated index incorporating four groups of indicators.

1. Security Dimension: distance from active combat zones; frequency of air raid alerts; number of recorded emergency events; availability of shelters and warning systems.

2. Infrastructure Resilience: accessibility of transport connections; stability of energy supply; operational status of accommodation facilities; availability of digital infrastructure.

3. Tourism Market Adaptability: changes in tourist flows compared with the pre-war period; share of domestic tourism; diversification of tourism products; speed of tourism service recovery following crisis events.

4. Socio-Institutional Resilience: participation of local communities; existence of crisis-management programs; level of inter-institutional coordination; implementation of sustainable development principles.

Each indicator was assessed using a five-point scale, after which the integrated adaptability index was calculated:

$$AI = \frac{(S + I + M + R)}{4}, \quad (1)$$

where AI – Adaptability Index of the tourism system; S – Security Dimension score; I – Infrastructure Resilience score; M – Tourism Market Adaptability score; R – Socio-Institutional Resilience score. Depending on the obtained value, three levels of tourism system adaptability can be distinguished: high adaptability ($AI > 4.0$); moderate adaptability ($AI = 3.0\text{-}4.0$); low adaptability ($AI < 3.0$). The proposed approach enables the comparative assessment of tourism regions under wartime risks, facilitates the analysis of tourism flow recovery dynamics, and supports the development of recommendations aimed at enhancing the resilience and adaptive capacity of tourism destinations.

Results and Discussion

In constructing the Global Wildlife Travel Index (2019), the international agency True Luxury Travel employs eight key indicators, some of which are composite (aggregated) measures incorporating several interrelated factors. On the one hand, this system of indicators enables the assessment of natural-resource endowments and institutional mechanisms for biodiversity conservation. On the other hand, it provides a basis for comparing countries according to their potential for nature-based tourism development, a segment of the tourism industry that is particularly sensitive to environmental constraints and conservation requirements (Table 1).

Table 1. Indicator system of the global wildlife travel index

No.	Indicator	What It Measures	Category / Rationale
1	Megafauna Conservation	Proportion of extant megafauna species (>40 kg) relative to historically native species	Biodiversity conservation
2	Wildlife Species Richness	Number of recorded wildlife species (mammals, birds, fish, reptiles, and amphibians)	Biodiversity
3	Prevalence of National Parks	Number of national parks within a country	Conservation infrastructure
4	National Park Pioneering	Year of establishment of the first national park (historical benchmark)	Institutional tradition
5	Protected Natural Areas	Area of protected territories (fully or partially protected) per 1,000 ha	Nature protection coverage
6	Forest Area	Share of forests in the total land area of a country (%)	Landscape resources
7	Environmental Sustainability	Composite indicator including renewable energy use, recycling practices, eco-friendly accommodation, sustainable products, and related environmental measures	Sustainable development
8	Environmental Prosperity	Composite indicator reflecting environmental quality, reduction of anthropogenic pressures, and effectiveness of conservation efforts	Sustainable development

Source: summarised by the authors based on P. Wight (2001), M. Saayman *et al.* (2012), A.L. Stronza *et al.* (2019)

The Megafauna Conservation indicator reflects the proportion of extant megafauna species (adult animals weighing more than 40 kg) relative to the historically native assemblage of such species within a given territory. In essence, this indicator captures the degree of biocenotic integrity of ecosystems and demonstrates the extent to which a country has succeeded in preventing the degradation of trophic chains critically dependent on large mammals. Importantly, the megafauna conservation indicator reflects not only contemporary conservation policies but also the historical scale of anthropogenic transformation and colonisation-driven land-use processes. Consequently, the indicator may partially penalise countries with a long history of industrialisation even when current conservation efforts are highly effective. The Wildlife Species Richness indicator represents the recorded number of animal species, including mammals, birds, fish, reptiles, and amphibians. However, species richness alone constitutes an insufficient measure of wildlife tourism attractiveness. Not all species are accessible for observation, and many possess limited tourism visibility. A more informative approach would involve a composite indicator incorporating endemism, the proportion of rare species, biogeographical uniqueness, and accessibility for ecotourism activities.

The Prevalence of National Parks indicator measures the total number of national parks within a country. Nevertheless, the number of parks does not necessarily correspond to the quality of the conservation system. From a scientific perspective, greater validity could be achieved by introducing a coefficient integrating park area, funding levels, accessibility for ecotourism, the existence of management plans, staffing capacity, and monitoring systems. The National Park Pioneering indicator is determined by the year in which the first national park was established. Methodologically, this variable has primarily historical and symbolic significance rather than practical relevance for evaluating contemporary ecotourism potential. An early start in the development of a protected area system does not automatically guarantee its current effectiveness. Therefore, this indicator should be interpreted as a marker of conservation tradition rather than as an equivalent factor within the ranking framework.

The Protected Natural Areas category accounts for the area of protected territories (fully or partially protected) standardised per 1,000 hectares of land. The authors of the index correctly acknowledge that large countries with low population density often contain extensive ecologically valuable territories that remain effectively conserved even

without formal protected status. This reveals a structural bias within the methodology: large countries require alternative scaling approaches, while legal protection status does not necessarily reflect the actual level of ecosystem conservation. Greater differentiation according to protection regimes – strict nature reserves, managed resource-use areas, buffer zones, ecological corridors, and similar categories – would improve the robustness of the assessment.

The Forest Area indicator measures the proportion of forest cover within the total land area of a country. Although forest cover is an important factor for ecotourism development, it is not universally applicable. For wildlife safaris, desert tourism, and arid-region destinations, its relevance is substantially lower. Consequently, this indicator would benefit from weighting adjustments that account for the landscape and biogeographical characteristics of individual regions. The composite Environmental Sustainability indicator reflects the development of environmental technologies and practices, including environmentally friendly products, eco-accommodation, renewable energy use, recycling systems, and related sustainability measures. For scientific applications, it is essential that the methodology relies on verifiable international statistical databases (e.g., UNEP, OECD, World Bank, Environmental Performance Index) rather than opaque expert assessments. The Environmental Prosperity indicator evaluates a country's performance across three dimensions: environmental quality, reduction of anthropogenic pressures, and the effectiveness of conservation efforts. The principal scientific limitation of this indicator lies in the absence of a clearly measurable operationalisation. The lack of transparent criteria reduces the representativeness of the index for academic analysis because it limits the reproducibility of results.

For each of the eight criteria, countries are ranked in descending order according to indicator performance. The highest-ranked country receives five points, whereas the lowest-ranked country receives one point. Intermediate scores range from 1.1 to 4.9 depending on the country's position within the ranking. The scoring interval is determined by the total number of countries included in the assessment (107 countries in the 2019 edition). The composite index is calculated by summing the scores obtained across all eight indicators. The theoretical maximum score is 40 points. In cases where countries achieve identical overall scores, priority is given to the country with the higher Environmental Sustainability score, thereby emphasising environmental modernisation as a fundamental prerequisite for sustainable tourism development.

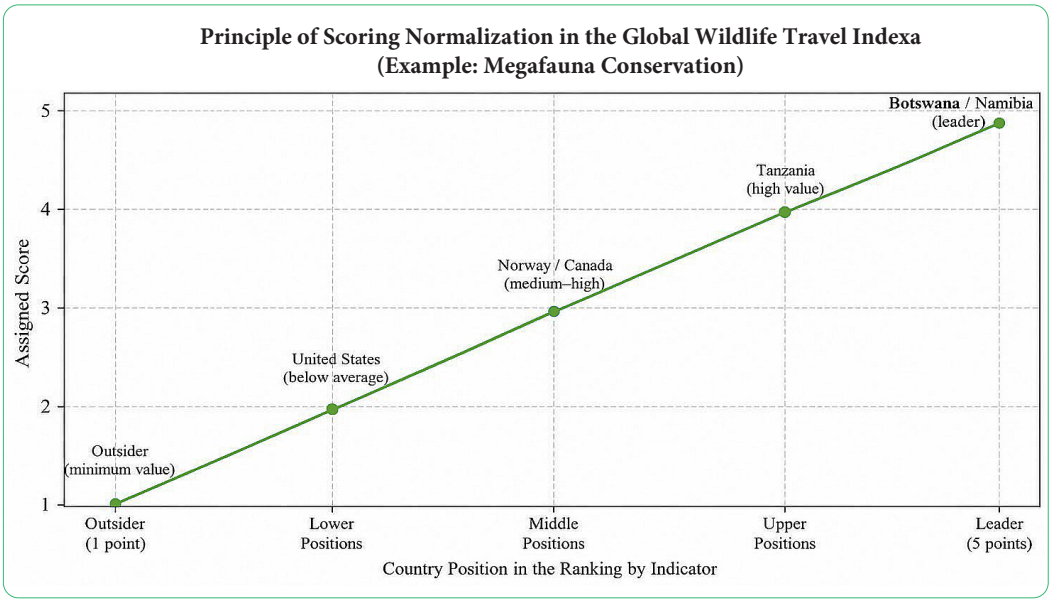

Figure 1. Principles of normalisation of Global wildlife travel index scores
Note: countries are given as illustrative examples according to the ranking description in the index methodology
Source: summarised by the authors based on Global wildlife travel index (2019)

The conducted analysis demonstrates that the True Luxury Travel Index can be regarded as a supplementary composite instrument for measuring the ecological and tourism potential of countries, as it integrates parameters relevant to both biodiversity conservation and nature-based tourism development. Its principal advantage lies in its multidimensional character, which partially reduces subjectivity and expands opportunities for international comparisons of destinations according to their prospects for travel-to-nature tourism segments. Thus, the index may serve as a preliminary analytical framework for benchmarking and stratifying countries according to their ecotourism prerequisites.

Simultaneously, the logic of tourism demand continues to evolve. Environmentally sensitive motivations, preferences for natural destinations, and expectations regarding the ecological integrity of tourism destinations are becoming increasingly prominent. However, the growing demand

for "pristine" natural environments creates a risk of transforming these areas into zones of critical ecological pressure when governance systems fail to keep pace with visitation growth (Bansal & Kumar, 2011). Studies addressing carrying capacity, including its social dimension, demonstrate that exceeding acceptable visitation thresholds affects not only environmental conditions but also the social quality of visitor experiences, thereby necessitating quantitative regulation and continuous monitoring (Rogowski *et al.*, 2025; Pulido-Fernández *et al.*, 2025).

In Ukraine, this issue is becoming increasingly relevant due to the continuous expansion of domestic nature-based tourism and the structural transformation of the tourism system under wartime conditions. The growth of nature-oriented tourist flows and the incorporation of previously undisturbed areas into recreational use may generate a new category of risks, including insufficient infrastructure capacity, inadequate visitor control mechanisms, weak monitoring systems, and imbalances between conservation objectives and commercial exploitation. International experience in the management of protected areas demonstrates that institutional constraints – financial, regulatory, and organisational – often determine the upper limits of sustainability, even when appropriate strategic frameworks are in place (Bezuglyi *et al.*, 2019; Sharpley *et al.*, 2023; Lundén *et al.*, 2025).

These circumstances reveal an important research gap. Despite the rapid expansion of studies devoted to tourism governance, visitor management, and overtourism, insufficient attention has been paid to the institutional adaptation of contemporary environmentally safe tourism governance models to countries characterised by uneven infrastructure development, crisis-related challenges, and highly volatile tourism demand. In particular, further methodological refinement is required regarding the integration of carrying-capacity assessment (including social carrying capacity), adaptive management of visitor flows and seasonality, financial mechanisms supporting conservation regimes, and resilience criteria for tourism destinations (Medina-Chavarría *et al.*, 2024; Pulido-Fernández *et al.*, 2025; Mandić *et al.*, 2025).

The sustainability of the tourism industry has become a strategic priority because tourism simultaneously generates economic value while increasing pressure on ecosystems and local communities. In this context, environmental safety in tourism should not be interpreted as an additional conservation component but rather as an integrated indicator of sustainability that reflects the balance between tourism development, ecological carrying capacities, and the socio-economic needs of host territories. However, environmental safety can only be achieved through scientifically grounded governance, including the determination of ecological thresholds, regulation of recreational pressures, and implementation of ecosystem restoration mechanisms. Consequently, one promising instrument for reducing pressure on wilderness areas is the managed redistribution of visitor flows toward anthropogenic and semi-natural attractions – such as parks, botanical gardens, cultural landscapes, and urban green spaces – which can function as buffer zones and reduce pressure on biodiversity hotspots.

Comparative analysis of tourism models demonstrates that natural resources generate different logics of destination positioning and governance. In Northern European countries, natural landscapes constitute the basis of a high-quality tourism product, with emphasis placed on infrastructure development and regulatory support for environmentally responsible practices, including route management, green mobility, and waste management systems. In contrast, in many countries of Africa and Southeast Asia, natural resources are often utilised according to a short-term profit maximisation logic, increasing the risks of overexploitation and social vulnerability. Consequently, the principal differentiating factor is not the mere presence of natural resources but rather the quality of institutions, namely their capacity to regulate visitor pressure, ensure equitable benefit distribution, and maintain trust among local communities.

This observation is particularly relevant for Ukraine, where natural landscapes remain a key tourism asset and the increasing orientation toward domestic tourism strengthens the need for rational-use regulations and institutional protection mechanisms. Although the tourism sector demonstrated considerable adaptability following the decline of 2020-2021, structural problems remain unresolved. Overtourism has temporarily disappeared from public discourse; however, as mobility recovers, the familiar causal cycle re-emerges: unchanged regulatory mechanisms, growing demand, environmental degradation, infrastructure overload, social tensions, and declining destination quality. Consequently, the central scientific challenge is how to transform the concept of "sustainable tourism" from a normative declaration into a measurable and operational governance framework.

This transition is reflected in the approaches promoted by the World Tourism Organization (2026), which interprets overtourism risks not merely as a matter of local destination management but as an issue of broader global governance involving standards, coordination platforms, monitoring systems, and comparative analytical frameworks. A practical step in this direction has been the Measuring the Sustainability of Tourism (MST) initiative, designed to establish a universal statistical framework integrating economic, environmental, and social indicators. Its significance lies in the fact that sustainability cannot serve as a basis for management decisions without standardised metrics. The absence of comparable data often results in fragmented policies and the substitution of actual constraints with symbolic measures. Consequently, MST has the potential to strengthen evidence-based planning, support intersectoral dialogue among tourism, environmental, transport, and urban planning stakeholders, and provide a robust foundation for measuring progress toward sustainable development goals. Within this framework, the International Network of Sustainable Tourism Observatories

(INSTO) functions as an institutionalised monitoring system at the destination level, enabling continuous assessment of tourism impacts and facilitating the transition from policy intentions to indicator-based governance.

Within contemporary conservation strategies, protected areas increasingly assume a dual role: they serve simultaneously as biodiversity conservation cores and as platforms for environmentally responsible tourism, provided that ecological limits are respected. A prominent example is the activity of EUROPARC and its European Charter for Sustainable Tourism in Protected Areas, which offers a practical methodology for reconciling tourism development with conservation objectives and community interests. Structurally, the approach is implemented through three interconnected modules: sustainable destination management (rules, limits, spatial planning, and visitor behaviour standards), sustainable partners and businesses (environmental standards for services and resource use), and sustainable tour operators (responsibility for mobility and group management practices). In this way, the Charter institutionalises a governance compromise by permitting recreation while subordinating it to long-term principles of responsibility and stakeholder participation.

At the same time, global conservation management standards are increasingly shaped by the International Union for Conservation of Nature (IUCN), particularly through its classification of protected area management categories and the IUCN Green List certification framework. The principal value of this approach for ecotourism lies in shifting attention from the mere existence of protected areas to measurable conservation outcomes. These outcomes ultimately determine the acceptable limits and forms of tourism use. Equally important are global monitoring systems and databases such as Protected Planet and the World Database on Protected Areas (WDPA/OECM), which enable protected areas to be understood as components of a planetary environmental security system rather than isolated local entities.

Tourism sustainability rankings and destination indices constitute another important mechanism influencing competitiveness. These instruments simultaneously perform marketing functions and act as forms of "soft regulation," shaping tourist flows and investment decisions. The Global Wildlife Travel Index (2019) illustrates how attractiveness for wildlife tourism depends not only on resource endowments such as biodiversity and protected areas but also on institutional conservation capacities and risks associated with species decline.

The leading positions occupied by certain countries provide an important practical insight: environmental policy should be viewed not as a cost but as a source of competitive advantage within markets characterised by environmentally conscious demand. However, the results of the 2025 Global Wildlife Travel Index (Best countries for wildlife…, n.d.) indicate relatively weak positions for Ukraine, where the principal limiting factor is the ongoing full-scale war, which undermines tourism capacity through security risks, infrastructure destruction, and ecosystem degradation. Therefore, competitiveness in ecotourism is determined by a triad consisting of natural capital, institutional quality of governance, and resilience to risks (security, infrastructure, and public trust). This triad forms the conceptual framework for further analysis of environmental safety in tourism as a measurable foundation for the long-term sustainability of tourism destinations.

The identified methodological limitations – including the ambiguity of certain indicators, potential inaccuracies in primary statistical data, and insufficient transparency regarding weighting coefficients – reduce the scientific reliability of the ranking as a stand-alone source of evidence. Therefore, the application of the index in academic research should be critical and verification-oriented, requiring the validation of underlying data and the comparison of results with established international assessment systems such as the Environmental Performance Index (EPI), the SDG Index, Protected Planet, and the FAO Forest Resources Assessment. From a methodological perspective, further validation of the instrument is possible only through greater transparency in calculation procedures, refinement of weighting schemes, and stronger data quality control mechanisms. Such improvements would facilitate the transformation of the ranking from a marketing-oriented analytical product into a robust measurement tool for sustainable tourism research.

Additional empirical evidence confirming the decisive role of military and political factors in shaping Ukraine's tourism system is provided by the results of the Global Peace Index 2025 (Institute for Economics & Peace, 2025), which place the country among the lowest-ranked states in terms of security. However, in this context, security should not be regarded merely as a background condition; rather, it constitutes a structural constraint on tourism recovery. Thus, for Ukraine, security has become a fundamental regulator of tourism development, determining the economic feasibility of international tourist flows and particularly constraining wildlife and nature-based tourism, which critically depends on transport accessibility, environmental predictability, and social stability.

Low positions in international tourism rankings should not be interpreted as a complete reflection of Ukraine's actual tourism potential, since ranking systems often overemphasise infrastructure and security indicators while underestimating socio-cultural and behavioural determinants of tourism demand. Particularly illustrative in this regard are the findings of a large-scale international study demonstrating that Ukrainians exhibit one of the highest levels of psychological connectedness to nature among populations of 61 countries. From an applied perspective, this finding indicates a stable domestic demand for nature-based recreational activities even under conditions of restricted inbound tourism. Furthermore, it suggests the existence of a behavioural foundation for responsible ecotourism that, with appropriate support through environmental education, interpretation

services, and regulatory incentives, could evolve into sustainable patterns of domestic tourism demand.

The heterogeneity of Ukraine's international tourism positioning should also be taken into account. In 2025, two Ukrainian rural settlements were included among the world's best tourism villages according to UN Tourism. Even under crisis conditions, local "growth points" remain capable of meeting international standards within rural, nature-based, and sustainable tourism segments. From a scientific perspective, this strengthens the argument for policies focused on pilot destinations where recovery models can be tested through the integration of conservation instruments, spatial planning, and destination marketing strategies.

In 2025, ecotourism in Ukraine has naturally assumed a predominantly domestic character, giving rise to a model of wartime adaptive tourism focused on short-distance travel and relatively safe natural regions such as the Carpathians and Polissia. Nevertheless, the dominance of domestic tourism flows cannot fully compensate for the loss of the international tourism segment without a transition toward systemic recovery measures. Ukraine's return to leading positions in global nature-based tourism rankings will be realistic only under conditions of improved security, restoration of international air connectivity, comprehensive ecological reconstruction measures (including renaturalisation and biodiversity restoration), and infrastructure modernisation in accordance with sustainability and accessibility principles.

Contemporary ecotourism development is increasingly accompanied by the emergence of a comprehensive set of supranational governance instruments aimed at promoting sustainable tourism. However, the effectiveness of their implementation at the national level remains uneven: in some countries these instruments act as catalysts for transformation, whereas in others they remain largely declarative. Consequently, it is scientifically justified to move beyond describing global initiatives and instead focus on the analysis of national governance models that directly shape tourism development trajectories and their environmental consequences.

International experience demonstrates the dual nature of ecotourism. Under effective governance, ecotourism can mitigate the negative effects of mass tourism and support biodiversity conservation. Under weak regulatory frameworks, however, it may contribute to ecosystem degradation and territorial overuse. Therefore, the principal scientific and practical challenge is the identification of governance models capable of balancing tourism attractiveness with ecological sustainability. To achieve this objective, it is useful to compare countries recognised as leaders in environmentally safe tourism development (Australia, the United Kingdom, Germany, Norway, the United States, and Canada) with countries undergoing active ecotourism expansion (Kenya, Botswana, Brazil, China, Malaysia, Mongolia, among others), moving beyond simple comparison toward the development of a typology of governance models.

Such a typology can logically be based on several key dimensions: the institutional role of the state; the spatial and ecological characteristics of natural areas; the role of nature-based tourism within the national tourism product and destination promotion strategies; the structure of tourism demand (domestic versus inbound tourism, seasonality); visitor management regimes (soft, strict, or absent); the role of protected areas; and the quality of infrastructure and interpretation services, including accessibility, digital technologies, and socio-cultural programs. The synthesis of these criteria enabled the identification of eight principal models of ecotourism development among leading countries in this field. The subsequent analysis of these models makes it possible not only to describe governance practices but also to demonstrate their influence on ecological sustainability, destination competitiveness, and the reproduction of natural capital as a strategic foundation of tourism development.

Model 1: Large Territories, High Urbanisation, and Strong Natural Capital

The first model is characteristic of countries with extensive territories, high levels of urbanisation, and populations concentrated in major metropolitan areas, including the United States, Canada, and Australia. This spatial-demographic configuration generates uneven recreational pressure: large natural areas remain relatively undeveloped, while resource-extraction regions, agricultural clusters, and metropolitan peripheries experience intensive anthropogenic transformation. These areas are frequently affected by environmental imbalances such as ecosystem degradation, pollution, habitat fragmentation, waste accumulation, and biodiversity loss. Under such conditions, environmental safety becomes not only a conservation priority but also an indicator of quality of life and social stability. Consequently, ecotourism assumes an instrumental role by combining recreation with environmental education, support for conservation management, and the promotion of environmentally responsible behaviour. The principal drivers of development within this model include extensive natural resources supported by networks of protected areas and national parks, together with strong social demand for nature-based recreation stimulated by local environmental concerns.

In these countries, nature-based tourism occupies a strategic niche within the tourism product. Visitor flows are generated both by domestic demand and by international tourists attracted by the high symbolic and image value of natural heritage. Protected areas – particularly national parks with recreational and educational functions – constitute the primary spatial framework of ecotourism development. The combination of long-standing ecotourism traditions and extensive territories enables relatively soft visitor management through spatial dispersion, diversification of routes and recreational activities, and sophisticated logistical systems. At the same time, accessible protected areas are typically characterised by a high level of infrastructure development, including marked trails, tourist information centres (TICs), environmental education facilities, digital navigation systems, inclusive recreational infrastructure,

and public awareness programs. Protected areas are generally administered by public institutions, although patterns of interaction with the private sector and non-governmental organisations vary according to administrative traditions and public management models.

The United States represents a particularly illustrative example of this first model. Environmental safety is developed within a system of lands managed by multiple jurisdictions, including federal agencies, subnational authorities, and private stakeholders. The existence of one of the world's oldest national park systems has fostered governance practices aimed at preventing overcrowding, minimising the impacts of mass tourism, and optimising visitor flows through logistical planning. The regulatory framework is multi-level, encompassing federal, state, and municipal governance. State authorities frequently play the decisive role in regulating tourism activities, providing flexibility and adaptation to local conditions while simultaneously creating significant interregional variation in regulatory approaches. The environmental effects of regulation are achieved through zoning mechanisms, restrictions on construction and infrastructure development, licensing requirements, penalties for environmental violations, user fees, and resource-use regulations.

An additional factor is the influence of case law, which encourages the adoption of advanced management practices within environmentally sensitive areas. This legal framework is complemented by foundational environmental legislation – including acts related to clean water, clean air, and endangered species protection – which establishes the broader system of environmental standards and conservation obligations. Regulations for individual protected areas are generally designed to minimise localised impacts such as noise, soil erosion, disturbance of nesting and migration processes, and the removal of biological materials. Importantly, since the 1970s the United States has experienced increasing deregulation within the tourism sector. As a result, responsibility for the management of tourism enterprises has shifted substantially toward state governments, while the federal level performs primarily strategic and coordinating functions, including through institutions such as the US Travel and Tourism Advisory Board. Notably, sustainable development and environmental safety are not always explicitly articulated as central priorities within national tourism strategies. Instead, ecotourism is often promoted indirectly through support for small businesses, environmental education initiatives, and interagency cooperation (Table 2).

Table 2. US federal authorities in the national ecotourism management system: categories of functions and impact indicators

Federal Agency	Regulatory Function	Conservation Function	Educational Function	Monitoring Function	Infrastructure Function	Analytical Impact Indicators
National Park Service (NPS)	Visitor regulations, access rules, and restrictions	Protection of ecological, cultural, and landscape integrity	Environmental interpretation and visitor education	Monitoring visitor pressure and tourism flows	Maintenance of parks, trails, and visitor facilities	Reduced environmental degradation; biodiversity stabilisation; controlled visitor flows; increased ecosystem carrying capacity
U.S. Forest Service (FS)	Regulation of recreational activities in national forests	Sustainable forest and wilderness management	Large-scale educational programs and stakeholder engagement	Assessment of ecosystem conditions under recreational pressure	Trails, roads, logistics infrastructure, and zoning regulations	Public-private partnerships (6,000+ guides); improved accessibility without compromising sustainability; managed expansion of ecotourism routes
U.S. Fish and Wildlife Service (FWS)	Regulation of refuge visitation and permitted activities	Biodiversity conservation in wildlife refuges and wetlands	Environmental education programs and outreach events	Monitoring of species, habitats, and migratory birds	Controlled access to protected areas under conservation regimes	Ecotourism supports conservation objectives; development of birdwatching tourism; increased environmental awareness and social value of protected areas
Bureau of Land Management (BLM)	Regulation of recreation and resource use on federal lands	Stewardship and conservation of natural ecosystems	Promotion of responsible behaviour through "Leave No Trace" standards	Spatial monitoring of recreation zones	Designation and maintenance of observation sites and recreation areas	Expansion of ecotourism through approximately 300 recreation areas; responsible visitor behaviour; reduced anthropogenic impacts
Environmental Protection Agency (EPA)	Environmental standards and impact regulations	Reduction of environmental risks through EIA and environmental assessment procedures	Guidelines and technical information for communities and businesses	Environmental and socio-economic impact assessment models	Indirect support through software tools, methodologies, and technical assistance	Evidence-based planning; prevention of overuse; integration of environmental KPIs into tourism planning

Table 2. Continued

Federal Agency	Regulatory Function	Conservation Function	Educational Function	Monitoring Function	Infrastructure Function	Analytical Impact Indicators
Bureau of Reclamation	Regulation of recreation in water-management systems	Protection and sustainable use of aquatic and landscape resources	Education on aquatic ecosystems and scientific outreach programs	Monitoring recreational impacts on aquatic and riparian ecosystems	Access infrastructure for water-based recreation and support facilities	Reduced vulnerability of aquatic ecosystems; development of educational and scientific ecotourism

Source: developed by the authors based on P.F.J. Eagles *et al.* (2002), C.M. Hall *et al.* (2010), J. Coria & E. Calfucura (2012), B. Lane & E. Kastenholz (2015), T.B. Dangi & J.F. Petrick (2021), E. Falko & V. Mateichuk (2023)

Thus, according to Table 2, the management of ecotourism in the USA is characterised by a multi-level institutional architecture, where federal services perform complementary functions of nature protection, access regulation, eco-education, monitoring and infrastructure provision. The qualitative categories presented in Table 3 are based on the procedure of quantitative expert assessment. The mechanism of the model is based on a combination of regime nature use (zoning, restrictions, control) with program-analytical support and partnership involvement of stakeholders. As a result, ecotourism functions as a managed socio-ecological-economic system that reduces the risks of excessive recreational pressure and ensures long-term environmental protection effects. The high intensity of regulatory and environmental protection instruments confirms that the preservation of ecosystems is considered a basic prerequisite for the competitiveness of eco-destinations.

Table 3. Functional importance, weighting categories, and impact indicators of US federal agencies in the system of environmentally safe tourism governance

Federal Agency	Regulatory Function	Conservation Function	Educational Function	Monitoring Function	Infrastructure Function	Key Analytical Impact Indicators
National Park Service (NPS)	H	H	M	M	H	Control of recreational pressure and visitor-use regimes; preservation of ecological, historical, and landscape integrity; improved management of tourist flows
U.S. Forest Service (FS)	M	H	H	M	H	Scaling environmentally safe tourism development through sustainable recreation management; partnerships with the private sector; maintenance of trail networks and accessibility without compromising ecosystem resilience
U.S. Fish and Wildlife Service (FWS)	M	H	H	H	M	Environmentally safe tourism as a tool for biodiversity conservation; development of birdwatching and nature interpretation; support for conservation regimes within wildlife refuge networks
Bureau of Land Management (BLM)	H	M	M	M	H	Spatial expansion of environmentally safe tourism across federal lands through recreation and observation areas; implementation of "Leave No Trace" principles; reduction of anthropogenic impacts
Environmental Protection Agency (EPA)	H	M	M	H	M	Enhancement of evidence-based governance through environmental data, models, and software tools; integration of environmental-economic assessments into tourism planning; prevention of ecosystem overloading
Bureau of Reclamation	M	M	M	M	H	Managed recreation within water-resource systems; development of educational and scientific ecotourism; reduction of degradation risks in sensitive aquatic ecosystems through regulated visitor activities

Note: H – High importance (3 points); M – Medium importance (2 points); L – Low importance (1 point). Categories are derived from expert assessment and subsequent quantification using the methodology described in the Materials and Methods section

Source: summarised by the author based on P.F.J. Eagles et al. (2002), C.M. Hall et al. (2010), J. Coria & E. Calfucura (2012), B. Lane & E. Kastenholz (2015), T.B. Dangi & J.F. Petrick (2021), E. Falko & V. Mateichuk (2023)

Australia represents a prominent example of a country where environmentally safe tourism constitutes the core of tourism specialisation and where nature is treated as a strategic intangible asset requiring a dedicated conservation regime. This approach is supported by a well-developed legislative framework, particularly the Environment Protection and Biodiversity Conservation Act (1999) and the Great Barrier Reef Marine Park Act (1975). Institutionally, tourism is integrated with the environmental and natural resource management sector, reflecting the strategic importance of natural capital within the national tourism product.

The central policy framework is provided by the National Ecotourism Strategy (NES), implemented since 1994, which establishes a comprehensive policy architecture

encompassing environmental sustainability, spatial planning, resource management, regulation and infrastructure development, impact monitoring, destination marketing, certification and accreditation systems, environmental education, and Indigenous participation. From both scientific and practical perspectives, Australia exemplifies a model in which ecotourism functions as a system-forming economic sector governed through an integrated strategic framework rather than fragmented regulatory interventions.

At the state level, individual legal regimes govern protected areas, including mechanisms for the establishment of privately protected lands. To coordinate responsibilities between federal and state authorities, bilateral agreements are widely employed. A partnership-based approach is implemented through the National Reserve System Program, under which the government may compensate up to two-thirds of the acquisition costs incurred by private investors purchasing conservation lands. Revenues generated from these arrangements are accumulated within the Australian National Parks Fund. Additional conservation instruments include conservation covenants, which are voluntary agreements between governments and landowners restricting land-use activities for environmental purposes.

The institutional framework consists of the responsible federal ministry, Tourism Australia (international promotion and strategic tourism development), and the Director of National Parks (management of federally protected areas). Notably, Australia's ecotourism certification system has served as a methodological foundation for numerous international certification frameworks, demonstrating the country's role as a global exporter of environmental governance practices and a leader in ecotourism management.

Model 2: Nordic Sustainable Nature-Based Tourism

The second model is characteristic of Norway, Sweden, Finland, and Iceland and is based on the combination of high urbanisation levels and institutionally mature environmental policies. Unlike many other highly urbanised countries, the Nordic states have systematically minimised environmental risks through effective waste management, decarbonisation policies, energy-efficiency measures, and the large-scale implementation of green technologies. Consequently, sustainability in tourism functions not as a marketing concept but as a normative foundation for sectoral development. A critical feature of this model is that, despite advanced economic modernisation, Nordic countries have preserved extensive areas of minimally disturbed natural landscapes that constitute the primary resource base for ecotourism. Competitiveness is therefore achieved not through intensive recreational development but through the capitalisation of environmental quality combined with high transport accessibility, advanced infrastructure, and environmental certification systems. Their leading positions in international sustainability rankings should be interpreted as the outcome of deliberate public policy that shapes ecotourism as a managed system while minimising land-use conflicts.

A distinctive characteristic of the Nordic model is its cross-sectoral nature. Environmental safety criteria are integrated not only into traditional nature-based tourism but also into ski tourism and cultural-heritage destinations. Sweden operates the Nature's Best certification scheme under the leadership of the Swedish Ecotourism Society, while Norway actively promotes environmental certification programs such as Ecotourism Norway and Green Travel, institutionalising environmental responsibility within the tourism business sector. Finland supports national ecotourism initiatives that strengthen its position in the global nature-based tourism market. Consequently, the promotion of Nordic tourism products is closely aligned with state strategic priorities aimed at ensuring long-term competitiveness.

Since 2017, Norway has formally embedded sustainability, responsibility, and competitiveness into national tourism policy while increasing investments in environmentally sustainable tourism infrastructure. This reflects a transition from declarative environmental commitments to environmentally conditioned planning, where sustainability constitutes a prerequisite for tourism development. An important institutional foundation is the legally and culturally embedded principle of allemannsretten (the right of public access to nature), codified in the Outdoor Recreation Act (1957). While the Act permits a broad range of recreational activities – including hiking, camping, and gathering wild berries and mushrooms – it is balanced by a high level of environmental awareness and effective visitor-flow management.

The dominant governance approach is soft management. Rather than restricting access, public authorities invest in optimising the spatial organisation of tourism through trail construction and reinforcement, expansion of route networks, and the creation of alternative visitor pathways. Additional regulatory support is provided by the Nature Diversity Act and the Environmental Information Act, which institutionalise the principles of environmental democracy through public access to environmental information and citizen oversight. Arctic tourism, particularly in Svalbard, is governed through stricter conservation regimes supported by substantial penalties, illustrating a principle of zero tolerance toward environmentally harmful practices in fragile ecosystems. A key role in tourism development is played by Innovation Norway, which combines product development with international destination branding. National parks are managed by governmental conservation agencies and supported by specialised inspection and directorate structures.

The effectiveness of the Nordic model is further strengthened through partnerships with civil society organisations, particularly the Norwegian Trekking Association (DNT). This influential network simultaneously maintains trail infrastructure, provides visitor information, promotes environmental stewardship, and reinforces social norms of environmentally responsible behaviour. The model is complemented by a comprehensive environmental

certification system, including Nordic Swan, Eco-Lighthouse, Green Key, ISO 14001, and Blue Flag, whose requirements frequently exceed minimum legislative standards. Norway additionally operates the Sustainable Destinations certification program, which requires reassessment every three years and transforms sustainability from a one-time declaration into a continuously verified process. Overall, the Nordic model represents a benchmark of managed ecotourism development, combining strong environmental policy, regulated public access to nature, state coordination, partnerships with non-governmental organisations, certification as a quality standard, and soft visitor-flow management. As a result, ecotourism functions not merely as a tourism segment but as an instrument of environmental policy and socio-economic modernisation through the sustainable use of natural capital.

Model 3: The Western European Integrated Eco-Destination Model

The third model is characteristic of leading Western European countries and has emerged under conditions of high population density, long-term economic transformation of landscapes, and a relative scarcity of wilderness areas. Consequently, ecotourism is primarily based on partially modified or renaturalised ecosystems and integrates natural heritage with cultural landscapes and local community practices. Ecotourism within this model therefore represents a hybrid product combining nature, culture, and local economic activities rather than a strictly nature-centred tourism experience. During the initial establishment of protected areas, conflicts frequently arose between conservation objectives and the interests of landowners and agricultural stakeholders. Contemporary protected areas are therefore the result of negotiated compromises and legal balancing among three objectives: environmental and biodiversity conservation, support for local economies and traditional land-use practices, and the provision of recreational access and tourism attractiveness. As a consequence, many protected areas simultaneously contain conservation zones, agricultural land, settlements, and cultural heritage sites.

This spatial configuration directly shapes the tourism product, which typically combines hiking and cycling routes with cultural-nature excursions, agritourism, gastronomic tourism, and wine tourism experiences. Ecotourism consequently performs a dual function: environmental education and economic diversification of rural areas. The compact geographical structure of Europe and the transboundary nature of many ecosystems have encouraged institutional cooperation, including joint environmental monitoring, harmonisation of visitor-capacity regulations, coordinated planning of eco-infrastructure, and the development of transnational route networks, particularly within mountain and border regions such as the Alps. The model is characterised by a large number of stakeholders and complex land-tenure arrangements. This necessitates a system of multi-level governance involving national governments, regional and local authorities, non-governmental organisations, and private businesses. While multiple actors participate in management processes, the state retains a central role in strategic planning, regulation, and enforcement of environmental standards, thereby preventing excessive commercialisation of natural heritage.

The United Kingdom provides an illustrative example of this model. Tourism development is institutionally supported by the Development of Tourism Act, which established the organisational foundations for state support through national tourism institutions, financial incentives, and registration procedures. Simultaneously, a comprehensive environmental and spatial-planning framework has evolved, including legislation related to wildlife conservation, land-use planning, public access to rural areas, and protected-area management. A distinctive feature of British national parks is their orientation toward the recreational needs of a highly urbanised population. This explains the predominance of domestic tourism and short-duration visits, often limited to a single day. Historically, British national parks were established after World War II primarily as instruments of social policy. Consequently, greater emphasis was placed on landscape protection and public accessibility than on the conservation of untouched wilderness ecosystems.

The integration of private land ownership, agricultural holdings, and permanent settlements has led to the interpretation of national parks as cultural landscapes, thereby increasing management complexity and intensifying the classical "conservation versus recreation" dilemma. The response to this challenge involved the institutionalisation of conservation priorities in situations of acute conflict through the well-known Sandford Principle, as well as the strengthening of the autonomy of park management authorities, particularly through reforms implemented during the 1990s. Contemporary British national parks often deviate from the traditional model of strictly protected wilderness areas. Instead, they remain living landscapes where people reside and engage in economic activities, while the National Park designation simultaneously performs a territorial development and destination-branding function.

Management discipline is reinforced through the mandatory revision of management plans every five years and through the environmentalisation of tourism products via green certification schemes and support for environmentally friendly accommodation facilities. Consequently, the third (Western European) model may be characterised as ecotourism within an integrated cultural landscape system, where natural values are conserved, recreational access is maintained, and the viability of rural communities is supported through the managed diversification of local economies.

Model 4: The Eastern European Transitional Model – Ecotourism as an Instrument of Regional Transformation

The fourth model emerged in Eastern European countries, where ecotourism performs not only a recreational function but also a structural one by supporting the transformation of natural resource use, regional economic diversification, and local employment. In countries such as Poland, Hungary, and the Czech Republic, this model has

reached a relatively high level of institutional maturity. Ecological trails are integrated into national tourism products, supported by basic infrastructure – including signage systems, service nodes, and visitor information centres – and promoted alongside cultural and urban tourism. In contrast, ecotourism in Romania and Bulgaria develops under conditions characterised by socio-economic tensions, including structural unemployment and informal resource markets. These circumstances often generate resistance to conservation initiatives, as the expansion of protected areas is frequently perceived as a restriction on access to natural resources. The resulting conflict is therefore dual in nature, reflecting competition between a "survival economy" and a "conservation economy". Empirical evidence demonstrates that when effective communication and tangible economic benefits are provided, ecotourism gradually becomes an acceptable alternative to unsustainable resource exploitation.

Educational programs implemented in regions such as the Rhodope Mountains illustrate how ecological trails, small-scale accommodation facilities, and local tourism services can generate employment and stimulate local income circulation. International organisations frequently provide additional support and institutional momentum. The principal barrier to the successful functioning of this model is the lack of trust between local communities and conservation institutions. Consequently, instruments such as community-based tourism, co-management of protected areas, and equitable benefit-sharing mechanisms (e.g., allocating a share of ticket revenues and service fees to local budgets) become critically important. These mechanisms transform ecotourism from a perceived restriction into a development opportunity.

Model 5: The Southern European Diversification Model – Ecotourism as a Response to Seasonality and Overtourism

The fifth model is characteristic of Southern European countries traditionally oriented toward mass coastal tourism. The excessive concentration of tourist flows within coastal tourism hubs generates pronounced seasonality, infrastructure overload, landscape degradation, and conflicts over spatial resource use. Consequently, ecotourism acquires strategic importance as a mechanism for the spatial and temporal redistribution of tourists and for restructuring national tourism products toward greater sustainability. From an organisational perspective, this model closely resembles the Western European approach. Ecotourism is integrated with gastronomic and rural tourism, supported by infrastructure and visitor information centres, and systematically promoted in both domestic and international markets. However, in certain destinations ecotourism itself has expanded to a mass-tourism scale, as illustrated by the case of Plitvice Lakes National Park. Coastal destinations increasingly adopt the integrated formula of "sea + nature + culture". The principal risk associated with this model is greenwashing, whereby ecotourism functions primarily as a marketing label rather than as a genuinely sustainable tourism practice. Consequently, effective governance requires visitor quotas, zoning regulations, carrying-capacity controls, sustainability standards for tourism facilities, and continuous monitoring of environmental impacts.

Model 6: The Eco-Resort Model – Comfortable Nature Experiences for High-Value Tourism Demand

The sixth model is typical of countries and territories where ecotourism is marketed as a comfortable and aesthetically enhanced interaction with nature within a resort-oriented framework. Examples include Costa Rica, the Maldives, Seychelles, parts of the Caribbean region, and several destinations in Oceania. The model is fundamentally oriented toward high-spending visitors and environmentally branded premium tourism services. Costa Rica represents a particularly illustrative example of a successful transition from extensive deforestation to institutionally supported forest restoration, which subsequently became the resource foundation of a globally recognised ecotourism industry. Alongside small-scale ecolodges, large destination-oriented resorts have also emerged. Nevertheless, the model reveals an important paradox: visitor concentration within national parks may transform ecotourism into a form of mass tourism, where commercial objectives gradually overshadow environmental protection goals. The principal conclusion associated with this model is that ecotourism is not inherently sustainable. Sustainability is achieved only when visitor management systems, visitation limits, environmental standards, and conservation practices extend beyond protected areas into broader destination management frameworks. Otherwise, environmental responsibility remains largely rhetorical.

Model 7: High Potential, Low Capacity – The Early Institutionalisation Model

The seventh model encompasses countries possessing substantial natural tourism resources but relatively weak tourism systems. Under such conditions, environmentally safe tourism development often occurs spontaneously, while governance remains limited due to political instability, economic imbalances, low-income levels, and inadequate infrastructure. Within this model, it is useful to distinguish between Latin American and African sub-models. In Latin America, tourism development is constrained by security concerns, limited transport accessibility, and institutional instability. Although natural attractions generate tourism demand, systemic risks significantly reduce competitiveness. In Africa, by contrast, growth is frequently supported by extensive networks of protected areas and strong international demand for safari tourism. Common features include transboundary conservation areas, the integration of public protected areas with private lodges, and the growing importance of privately managed reserves. The key lesson of the seventh model is that without institutional capacity – including effective governance, anti-corruption mechanisms, security policies, and basic infrastructure – environmentally safe tourism remains a localised phenomenon. Nevertheless, African experiences demonstrate that successful ecotourism development is possible even under constrained conditions when a functional core exists,

combining protected areas, public-private partnerships, certification systems, and community participation.

Model 8: The Asian State-Led and Network-Based Ecotourism Model

The eighth model encompasses countries of East and Southeast Asia, including China, Malaysia, Indonesia, and Vietnam. Within this framework, natural capital is integrated into national tourism products as a strategic source of competitiveness rather than as a supplementary attraction. Its defining characteristics include strong state involvement in tourism governance, program-based institutionalisation through strategies and action plans, and participation in regional and transnational initiatives that harmonise destination branding and environmental management approaches. China illustrates the transition from a predominantly domestic ecotourism market toward the use of ecotourism as an instrument of international positioning through destination marketing, infrastructure investment, and the expansion of protected-area networks. However, China cannot yet be considered an unequivocal leader because several challenges remain, including fragmented regulatory frameworks, zoning violations within protected areas, the predominance of group-tour formats, limited route diversity, and accessibility constraints affecting key destinations. These factors contribute to visitor overcrowding, localised environmental degradation, waste accumulation, and increasing pressure on natural resources.

Simultaneously, ecotourism in China generates substantial socio-economic benefits by stimulating domestic tourism demand, creating employment opportunities for local residents (guides, service providers, and hospitality workers), and promoting ethno-ecological tourism products. Nevertheless, infrastructure expansion is frequently accompanied by environmental and socio-cultural costs, including waste-management deficiencies, localised ecosystem degradation, commercialisation of traditional cultures, and risks of cultural assimilation. This duality represents the defining characteristic of the model: the coexistence of significant development potential and persistent governance imbalances.

Countries within the region typically emphasise national ecotourism plans and professional capacity building. Malaysia, for example, has incorporated ecotourism into national strategic planning through the National Ecotourism Plan 2016-2025, which integrates economic growth objectives with environmental sustainability goals. A particularly important indicator of institutional maturity is investment in the training of local guides as providers of environmental interpretation and environmental education. In the Philippines, ecotourism has been formalised through a national strategy and action plan focused on competitive tourism products, infrastructure accessibility, and institutional capacity within the broader framework of "tourism for development". In South Asia, particularly Nepal and Bhutan, strict demand-management instruments such as visitor quotas and high tourism fees prioritise ecological limits over visitor-number maximisation. Japan, by contrast, represents a more network-oriented variant in which non-governmental organisations and regional ecotourism councils play central roles, while government involvement is primarily expressed through grants, promotional activities, and oversight of environmental compliance.

The eighth model conceptualises ecotourism as an instrument of state policy or network governance in which nature simultaneously supports recreation, national branding, and the socio-economic integration of peripheral regions. Its central governance challenge is the reconciliation of three objectives: economic efficiency, social equity in benefit distribution, and ecological carrying capacity. The ability to transform tourism growth into a regime of managed sustainability ultimately determines whether the Asian model becomes an international benchmark or remains an example of substantial potential constrained by chronic governance imbalances.

The analysis of international models of environmentally safe tourism and recreational development demonstrates that their direct replication under Ukrainian conditions would be inappropriate due to differences in institutional environments, levels of environmental financing, structures of tourism demand, and contemporary security challenges. Nevertheless, many governance mechanisms and practical instruments may be successfully adapted to support the sustainable development of Ukraine's tourism and recreational sector. One of the most promising directions for Ukraine is the implementation of visitor management systems within protected areas. The experiences of the United States, Canada, Norway, and New Zealand demonstrate the effectiveness of zoning approaches, visitor quotas for sensitive sites, electronic reservation systems, and digital monitoring of recreational pressure. Such instruments are particularly relevant for the Ukrainian Carpathians, national nature parks, and other destinations characterised by high visitor concentrations, where increasing anthropogenic pressure is progressively contributing to the degradation of natural ecosystems.

Another important area for adaptation is the development of collaborative governance models and the expansion of local community participation in decision-making processes related to tourism and recreational resource management. The experiences of Scandinavian countries, Canada, and Kenya indicate that community involvement in destination governance enhances the effectiveness of conservation measures, promotes a more equitable distribution of economic benefits, and creates additional incentives for environmental stewardship. The introduction of environmental certification systems for tourism services and destinations also represents a promising avenue for Ukraine. International certification schemes such as Green Key, Blue Flag, and the Global Sustainable Tourism Council (GSTC) standards provide transparent benchmarks for environmental responsibility within the tourism industry and contribute to the international competitiveness of tourism destinations. In the postwar period, such instruments may become an important

component of Ukraine's tourism branding and international image-building efforts.

Particular attention should also be given to the implementation of regenerative tourism approaches, which extend beyond minimising environmental impacts and actively contribute to the restoration of natural and social capital. In the context of Ukraine's post-war recovery, these approaches could be integrated into programs for the rehabilitation of protected areas, the development of ecological trail networks, and support for local communities. Of growing relevance for Ukraine is the adaptation of the concept of wartime adaptive tourism. Unlike most international tourism governance models developed under relatively stable operating conditions, the contemporary Ukrainian context requires consideration of security risks, potential infrastructure damage, disruptions in tourism flows, and the necessity for rapid responses to crisis events. Consequently, a promising direction involves the integration of security indicators into destination management systems, the establishment of digital risk-monitoring platforms, and the development of mechanisms enabling the rapid adaptation of tourism products to changing external conditions.

International experience demonstrates that the effective governance of environmentally safe tourism and recreational development is based on the combination of institutional coordination, community participation, systematic monitoring of visitor flows, environmental certification, and advanced digital management technologies. Their adaptation to Ukrainian conditions may become a key component in the formation of a competitive, environmentally responsible, and resilient tourism and recreational system capable of supporting both post-war recovery and adaptation to climate change. The pilot application of the proposed methodology (Table 4) revealed significant spatial differentiation in the adaptability of Ukraine's tourism and recreational system under wartime conditions. The highest Tourism System Adaptability Index (AI) was recorded in the Western macro-region (AI = 4.20), which can be attributed to relatively favourable security conditions, a high concentration of domestic tourist flows, developed recreational infrastructure, and the active involvement of local communities.

The Central and Northern macro-regions demonstrate a moderate level of adaptability, reflecting the coexistence of substantial tourism potential with elevated security and infrastructure-related risks. In contrast, the Southern and Eastern macro-regions exhibit low adaptability, primarily due to their proximity to active conflict zones, infrastructure damage, instability of tourism demand, and restrictions affecting nature-based tourism development. The obtained results indicate that, under wartime conditions, the development of environmentally safe tourism in Ukraine should be based on a differentiated regional approach that accounts for variations in security conditions, infrastructure resilience, market adaptability, and institutional capacity.

Table 4. Expert-analytical application of the Wartime Tourism Adaptability Index for the macro-regions of Ukraine

Macro-Region of Ukraine	Security Dimension (S)	Infrastructure Resilience (I)	Tourism Market Adaptability (M)	Socio-Institutional Resilience (R)	Adaptability Index (AI)	Adaptability Level
Western Ukraine	4.0	4.1	4.5	4.2	4.20	High
Central Ukraine	3.0	3.5	3.1	3.4	3.25	Moderate
Northern Ukraine	2.7	3.2	2.8	3.3	3.00	Moderate
Southern Ukraine	2.0	2.6	2.4	2.8	2.45	Low
Eastern Ukraine	1.3	2.0	1.5	2.2	1.75	Low

Note: S – Security Dimension; I – Infrastructure Resilience; M – Tourism Market Adaptability; R – Socio-Institutional Resilience; AI – Adaptability Index calculated as the arithmetic mean of the four component dimensions

Source: compiled by the authors based on expert-analytical assessment using the proposed Wartime Tourism Adaptability Index methodology

The proposed adaptability index should be regarded as a pilot methodological framework that requires further empirical validation at the regional level using statistical indicators of security, tourism flows, and infrastructure resilience. The rapid growth in the popularity of ecotourism within the global tourism landscape has intensified scientific interest in this phenomenon among both academic researchers and practitioners in tourism governance and the tourism industry. Over recent decades, ecotourism has evolved from a niche recreational activity into a distinct segment of the tourism market characterised by its own ideology, institutional logic, and normative-value framework (Jacobson & Robles, 1992). This transformation has stimulated the emergence of a broad body of scientific literature addressing various aspects of ecotourism development, functioning, and governance (Yeoman, 2001; Newsome *et al.*, 2012; Mamotenko *et al.*, 2022).

Within the scientific discourse, several major thematic directions of ecotourism research can be distinguished. A substantial body of literature focuses on theoretical and methodological issues, including the refinement of conceptual definitions, the typology of ecotourism forms, the characterisation of specific ecotourism segments, and the examination of boundaries between ecotourism, nature-based tourism, and sustainable tourism, as well as the challenges associated with measuring sustainability in this field (Munévar-Chauta, 2024; Fennell, 2025). Another important research stream addresses international experiences

in ecotourism governance, examining public policies, regulatory models, institutional mechanisms, and visitor-management practices in natural areas (Munévar-Chauta, 2024). A separate line of inquiry investigates environmental safety and tourism sustainability, focusing on ecosystem degradation risks, recreational carrying capacity, the environmentalisation of tourism infrastructure, and systems for monitoring anthropogenic impacts (Smyk & Arkhypova, 2025). Research devoted to Ukrainian ecotourism destinations is also expanding, with particular attention given to the potential of protected areas, regional practices, and prospects for post-crisis tourism recovery (Wight, 2001).

An important component of the scientific understanding of tourism as a sector competing for resources, visitor flows, and investments concerns approaches to ranking territories according to their tourism potential. Among foreign scholars addressing issues of destination positioning within the international tourism space, particular attention should be given to G. Harris & K.M. Katz (1999). Based on extensive practical experience, these authors proposed a strategic framework for stimulating tourism development in countries with different levels of tourism maturity. According to their approach, a central element of tourism development strategy is the identification, public demonstration, and evidence-based justification of a destination's competitive advantages through comparative benchmarking against competing destinations – that is, through ranking procedures, destination positioning, and tourism branding strategies (Bansal & Kumar, 2011). In contemporary conditions, this approach has become even more relevant, as tourism flows are increasingly influenced not only by service quality but also by environmental standards, security risks, and the reputational stability of destinations.

At the same time, the Ukrainian academic discourse demonstrates different methodological emphases. Most Ukrainian studies are not directly focused on calculating or validating the indicators of the Global Wildlife Travel Index. Instead, researchers extensively employ internationally recognised tourism rankings such as the Travel & Tourism Competitiveness Index (TTCI) and the Travel & Tourism Development Index (TTDI). These indices effectively function as global benchmarks for evaluating the performance of tourism systems. Within Ukrainian scholarship, they are applied in three principal directions: assessing the competitiveness of Ukraine's tourism sector through international comparisons; analysing the methodological foundations and structural components of tourism indices, including institutional conditions, transport infrastructure, cultural resources, and regulatory policies; and developing practical recommendations for tourism policy and regional strategic planning.

In contemporary tourism research, the analysis of international tourism indices such as TTCI and TTDI occupies an increasingly important place because these instruments serve not merely as comparative rankings but also as tools of managerial diagnostics capable of identifying structural imbalances, infrastructure deficits, and institutional constraints within tourism systems. Significant contributions in this area have been made by Ukrainian scholars investigating Ukraine's position within the global tourism landscape. In particular, H. Haponenko *et al.* (2020) conducted a comprehensive analysis of the Ukrainian tourism market in comparison with global tourism competitiveness indicators. Using statistical data from the World Economic Forum (WEF) and the World Travel & Tourism Council (WTTC), the authors identified key factors constraining tourism development as well as potential directions for the growth of Ukraine's tourism system. An important contribution was also made by N. Shcherbakova (2021), who systematised major international tourism indices and conducted a comparative analysis of their methodological foundations. Within her research, TTCI and TTDI are interpreted as composite indicators encompassing a broad range of tourism-development dimensions, including institutional, infrastructural, and socio-economic factors, thereby providing a basis for evaluating tourism policies.

The work of S.O. Polkovnychenko & A.O. Murai (2018) focused on assessing Ukraine's competitive position within the European tourism market. By combining TTCI/TTDI indicators with economic and mathematical modelling approaches, the authors identified promising directions for enhancing the attractiveness of Ukraine as a tourism destination within the broader context of European integration. Another important contribution was made by B. Kovalov *et al.* (2017), who employed TTCI indicators to assess regional tourism potential. Their differentiation of Ukraine's 24 regions according to tourism development levels has substantial practical significance, providing a basis for regional tourism governance, investment prioritisation, and territorial development programs.

A significant contribution to the scientific understanding of index-based approaches was also made by H.O. Gorina (2016), who analysed infrastructure, human-capital, and institutional dimensions of tourism indices as fundamental determinants of tourism competitiveness. The value of her approach lies in the interpretation of tourism competitiveness not as a final ranking outcome but rather as a multidimensional system of causal relationships shaping tourism development. Thus, existing studies demonstrate the active and systematic use of international tourism indices as analytical tools for evaluating tourism competitiveness and supporting evidence-based policy recommendations. At the same time, an important methodological gap remains. Despite the extensive body of literature devoted to specific aspects of ecotourism, there is still no comprehensive comparative analysis of national governance models for environmentally safe tourism development that systematically integrates international best practices, institutional instruments, and environmental safety mechanisms across different countries.

Conclusions

The study demonstrated that the environmentally safe development of tourism and recreational activities is increasingly determined not by the mere availability of natural

resources but by the quality of institutional governance, the capacity to regulate visitor flows, maintain conservation regimes, and balance economic, social, and environmental interests. The analysis of international experience confirms the transition from the traditional understanding of ecotourism as a specific tourism segment toward its interpretation as a complex socio-ecological system whose sustainability depends on effective governance arrangements, visitor management practices, and the regulation of recreational carrying capacity.

As a result of the research, international approaches to the management of environmentally safe tourism and recreational development were systematised, and eight typological models of ecotourism development were identified. These models differ in terms of institutional architecture, the role of government and local communities, the degree of visitor-flow regulation, environmental certification mechanisms, and the integration of conservation objectives into tourism policy. The findings indicate that the most effective models combine multi-level governance, active community participation, systematic visitor monitoring, and environmental responsibility mechanisms implemented by tourism businesses.

The analysis of international tourism rankings and indices, particularly the Global Wildlife Travel Index, confirmed their value as instruments for comparative assessment and tourism policy design. At the same time, several methodological limitations were identified, including insufficient transparency of certain indicators, weighting procedures, and data aggregation methods. Consequently, such indices should be applied as supportive instruments within evidence-based tourism governance and interpreted in conjunction with other internationally recognised statistical and environmental datasets.

A significant contribution of this study is the development of the concept of wartime adaptive tourism, which considers tourism systems through the prism of their ability to maintain functionality, ensure visitor safety, and adapt to external shocks and crisis conditions. To operationalise this concept, an integrated Tourism System Adaptability Index (AI) was proposed, incorporating four dimensions of resilience: security conditions, infrastructure resilience, tourism market adaptability, and socio-institutional resilience. The pilot application of the methodology revealed substantial regional disparities in the adaptability of Ukraine's tourism system under wartime conditions, with the Western macro-region demonstrating the highest level of resilience and the Eastern and Southern regions exhibiting the greatest vulnerability.

The results suggest that the most promising directions for adapting international experience to Ukraine include the implementation of visitor-flow monitoring and management systems, the expansion of environmental certification schemes, the strengthening of community participation in destination governance, the incorporation of recreational carrying-capacity assessment tools, and the integration of regenerative tourism principles into post-war recovery strategies. The implementation of these approaches may contribute to enhancing the competitiveness of the tourism sector, preserving natural capital, and fostering a more resilient and environmentally responsible model of tourism development. Future research should focus on the empirical validation of the proposed Tourism System Adaptability Index at regional and destination levels, the quantitative modelling of recreational pressure on natural ecosystems, and the development of integrated indicators for assessing environmental safety and resilience of tourism systems under conditions of post-war transformation and climate change.

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Міжнародний досвід управління екологічно безпечним розвитком туристично-рекреаційної діяльності: моделі, тенденції та інструменти оцінювання

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Анотація. На сучасному етапі екологічно безпечний розвиток туристично-рекреаційної діяльності в Україні набуває стратегічного значення як пріоритетний напрям сталого розвитку, що сприяє використанню природних територій, формуванню екологічної свідомості та потребує системного регулювання для запобігання їх деградації. Метою даного дослідження було узагальнення міжнародного досвіду управління екобезпечним розвитком туристично-рекреаційної діяльності та формування аналітичної основи для його адаптації до українських умов. У роботі здійснено систематизацію зарубіжних управлінських підходів і виокремлено вісім типологічних моделей розвитку екологічного туризму, охарактеризованих за параметрами інституційної архітектури, ролі місцевих громад, інструментів контролю туристичних потоків, застосування екологічних стандартів та механізмів партнерського управління. На основі порівняльного аналізу кейсів було визначено ключові тренди: інтенсифікацію екологічної сертифікації, поширення community-based tourism, цифровізацію управління відвідуванням охоронюваних територій та розвиток low-impact tourism. Окрему увагу було приділено рейтингам та інтегральним індексам як інструментам формування конкурентоспроможності держав

у міжнародному туризмі та елементам сучасної геополітики. Проаналізовано структуру «Глобального індексу країн для подорожей дикою природою», здійснено порівняння позицій Австралії, Канади, США та України за окремими індикаторами й інтегральними значеннями. Виявлено методологічні обмеження індексу (чутливість до вибору показників та процедур агрегування), що знижує валідність підсумкових оцінок і потребує критичного використання у наукових дослідженнях. У дослідженні було обґрунтовано доцільність подальшого вдосконалення індексу з метою підвищення прозорості, відтворюваності та порівнюваності результатів

Ключові слова: екологічний туризм; природоорієнтований туризм; екологічно безпечні туристичні практики; міжнародний досвід; моделі екологічно безпечного розвитку туристично-рекреаційної діяльності; туристичні індекси та рейтинги