

The Ecosystem Approach to Guaranteeing the Constitutional Human Right to a Safe Environment

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Abstract

The article aims to analyse the ecosystem approach, which should ensure the constitutional human right to a safe environment. The research methodology was based on the use of econometric, comparison, and graphical methods. Analysing the legal instruments, the study identified ways of harmonising the ecosystem approach with the existing legal framework and policy to improve environmental protection. The need for joint efforts between the state, industry, and local communities to find common positions and the importance of strong institutional capacity, public administration, and law enforcement mechanisms was demonstrated based on data from 37 European countries and Ukraine. It is emphasised that it is possible to achieve a balanced prospect between economic development and environmental protection. The academic novelty of this research is an interdisciplinary approach, a new application of the ecosystem approach to human rights, a detailed analysis of challenges and solutions, and global and local prospects. Prospects for further research are the expansion of the analysis database to the level of world regions to obtain generalised results regarding the provision of the constitutional human right to a safe environment.

Keywords: human rights, ecosystem approach, public administration, constitution, rule of law, safe environment

Introduction

The protection of the environment and the preservation of a safe environment have become urgent global issues. Ensuring the constitutional right

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to a safe environment takes on paramount importance in the face of the deterioration of the ecological environment and its negative impact on human existence (Lewis, 2018). Although an important right is recognised in different international and national legal frameworks, it requires complex approaches to solving the complex interaction between human society and ecosystems (Cima, 2022). The basis of modern approaches is the ecosystem approach as a means of ensuring and observing the constitutional right of a person to a safe environment. The ecosystem approach is based on the understanding that the environment is a complex network of interconnected components, where the safety of human communities is closely related to the acceptable level of the ecosystems in which they exist.

Therefore, numerous studies focus on multifaceted aspects of the ecosystem approach and its implications for the observance of constitutional human rights. Contemporary scientific works emphasise the pivotal role of state governance, policy formation, and collaborative efforts in implementing the tasks of the ecosystem approach. At the same time, there are significant challenges and barriers faced by the implementation of the modern approach, which requires the development of a strategy to strengthen the state's capabilities for more effective implementation of the constitutional right to a safe environment (Boyle, 2012).

The comprehensive implementation of the ecosystem approach enables the state to contribute to the better use of its potential in solving environmental challenges while strengthening the protection of human rights. Ultimately, complex actions and a holistic approach to environmental conservation will contribute to a harmonious relationship between society and the natural environment (Cao et al., 2023).

Research Objectives

The research aims to study and analyse the ecosystem approach as an effective means of ensuring the constitutional right of a person to a safe environment and to identify the potential of using the ecosystem approach.

The aim involved the fulfillment of the following research objectives:

1. Identify key factors related to the ecosystem approach and determine their relevance for environmental protection and human rights.
2. Analyse the indicators of the state's achievement of ecological efficiency as a result guaranteed by the constitutional human right to a safe environment.
3. Establish the relationship between human rights and the state of natural ecosystems and their impact on the quality of life.

Literature Review

The issues related to guaranteeing a safe environment are both in the theoretical field and the practical activity of the governance system, the shaping of state policy, and methodological developments for determining the state of the environment. The specified aspects of the implementation of relevant state environmental measures provide for the definition of human rights, which must be implemented into the goals of the country's management system through constitutional norms and the legal environment (Muhammad & Long, 2021).

In October 2021, the UN Human Rights Council adopted Resolution 48/13 (UN, 2021), which recognised a clean environment as a human right. This provision is recognised by more than 150 countries in which the protection of the right to a proper environment is enshrined in constitutions, laws, the judicial system, and ratification of international documents.

The Resolution adopted in July 2022 by the UN General Assembly states that climate change and environmental degradation are among the most urgent threats to the future of humanity. It is suggested that efforts be intensified to ensure access to a clean, healthy, and sustainable environment at the national level (UN, 2022). It is predicted that the said Resolution will speed up the enshrining of the rights to a safe environment in national constitutions and will contribute to the state's compliance with the relevant laws. Global decisions that are based on earlier international approaches, including the Paris Agreement, have been made. The Paris Agreement, adopted in December 2015, established a key objective for the international community to combat the rise in global temperature within the limit of no more than 1.5°C (UN, 2023). Essentially, this aims to safeguard humanity from climate catastrophe.

A key theme of the Human Rights Council's 2018 report was the interdependence of environmental protection and human rights as a source of livelihood and prosperity. This confirms that environmental protection is the basis for the implementation of a wide range of human rights. All rights (the right to health, to life, to an adequate standard of living) are constantly influenced by negative environmental conditions, and a proper environment can be considered a precondition for ensuring human rights. Environmental protection is achieved in an environment of strong guarantees of human rights, as human rights violations are often linked to corruption and abuses of the process, personal interests, and political gains. Ensuring the protection of human rights (freedom of information, the right to vote, and the supremacy of the rule of law) will have a significant impact on strengthening environmental protection and promoting sustainable development (Knox, 2018).

The evolutionary development of governance models that provide for the introduction of an ecosystem approach is appropriate because of the appropriate vision of the interrelationship of the observance of human rights based primarily on constitutional provisions. In a general sense, the term "ecosystem approach" involves systemic thinking and the connection between structures of state governance and the environment, including the consideration of interactions between social and natural systems (Langlet & Rayfuse, 2019). At the strategic level, human rights impose clearer substantive obligations on governance that offer better chances of accountability for non-compliance (Boyle, 2012). The environmental rights of humans encompass laws that ensure the fulfillment of constitutional norms, including the right to a clean environment and the duties of the state to preserve and protect the surrounding environment (Lewis, 2018; Kostytsky, 2018).

Effective governance of the environment requires the development and implementation of environmental protection measures and policies, which must then be implemented. Based on this understanding, countries can promote compliance with environmental laws and regulations. Environmental policy is about regulating the relationship between people and the natural environment in a mutually beneficial way. This requires a clear data-based measurement of environmental performance to determine the effectiveness of policies and programmes of public authorities, assess progress made in improving the state of the environment, and ensure policy planning and decision-making processes (Nguyen et al., 2023; Tarasenko et al., 2023).

A human-centric approach provides that the state should invest in energy-efficient, environmentally friendly projects. This can contribute to environmentally sustainable development. Moreover, the state should formulate policies to stimulate sustainable economic growth that improves overall environmental performance (Ciot, 2023; Adeel-Farooq et al., 2023).

Various factors of state governance, such as political stability and the rule of law, shape an effective and capable administrative structure. A strong institutional system plays a decisive role in the formation and implementation of environmental policy and natural resource management (Maurer et al., 2023). The stability of corruption-free government institutions can create an effective strategy for the environmental sector, and the rule of law will ensure its enforcement (Muhammad & Long, 2021).

Therefore, current studies and global strategies emphasise the importance of an ecosystem approach to guaranteeing the protection of the environment and the constitutional human right to an environment safe for life and health. Researchers recognise the potential of an ecosystem approach to promote

sustainable development, address ecological imbalances, and promote a more just and sustainable future for humanity.

Methods

The research design involves several stages: (1) the use of two models of the dependence of environmental indicators on the level of compliance with the rule of law and the level of governance in the country (Wolf et al., 2022; World Justice Project, 2022; Legatum Institute, 2023); (2) comparison of the significance of models; (3) analysis of indicators of the Sustainable Development Index (Sachs et al., 2023); (4) analysis of the progress of the Environmental Performance Index over the past 10 years (Wolf et al., 2022).

Openly available data on 32 European countries and Ukraine were used to study the dependence of indicators of the ecological state on the level of compliance with the rule of law and the level of public administration. The methodology employs an indicator characterising the directions of state environmental policy and the implementation of constitutional rights to a safe environment. The Environmental Performance Index (EPI) is used as the specified indicator, encompassing dimensions such as the state of the environment and the viability of ecosystems (Adeel-Farooq et al., 2018; Adeel-Farooq et al., 2023). The solution to the task at hand can be aided by indicators of the environmental state of public administration and the environmental efficiency index (Nguyen et al., 2023).

The Rule of Law Index (World Justice Project, 2022) was used as a predictor demonstrating a state's ability to ensure the legality and guarantee the realisation of constitutional human rights. An alternative model utilised the Legatum Prosperity Index, which assesses well-being based on individual or national prosperity (Khan & Ahmad, 2019). As a predictor for the second model, the "Governance" component of the Prosperity Index was used, demonstrating the degree of control and limitation of power, as well as the level of government efficiency and the presence/absence of corrupt practices (Günay & Sülün, 2021).

Modern governance uses the concept of sustainable development goals (SDGs), which involves environmental sustainability. The SDG Index demonstrates the annual progress of all UN member states in achieving the SDGs, including the preservation of the environment and biodiversity (Sachs et al., 2023). The analysis uses available open data from the Central Bank Index of 37 European countries and Ukraine.

The final stage of the methodological approach was the analysis of the progress of the Environmental Performance Index over the past 10 years (Wolf et al., 2022) for 32 European countries and Ukraine.

The research methodology included the use of the econometric method, the comparison method, and graphic methods, which enabled the identification of the level of compliance with the constitutional human rights to a safe environment.

Results

The Environmental Performance Index (EPI) for the year 2022 showcases the summary of the state of sustainable development worldwide and the effectiveness of actions taken on climate change, environmental conditions, and ecosystem viability. These indicators assess how close countries are to the established goals of environmental policy on a national scale (Wolf et al., 2022).

The Rule of Law Index (World Justice Project, 2022) offers data based on factors that cover the concept of the rule of law, including transparency of public authorities, respect for fundamental rights, maintenance of security, compliance with the law, and civil and criminal justice.

Figure 1 shows the relationship between the Environmental Performance Index (EPI) and the Rule of Law Index.

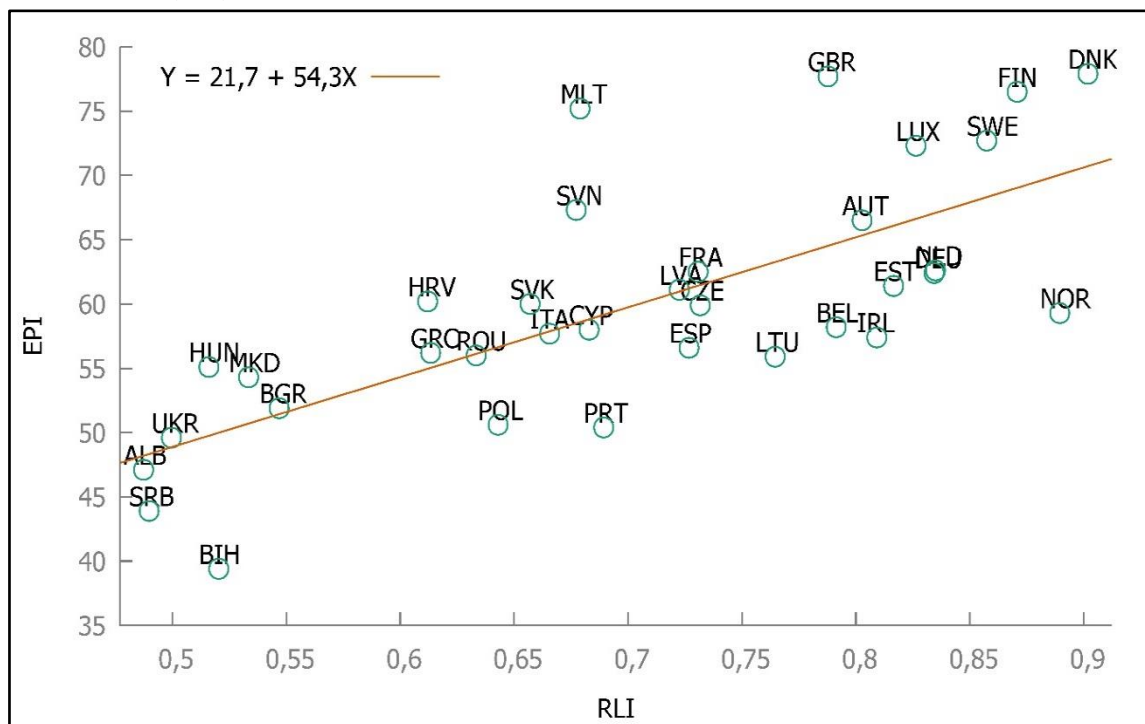


Figure 1. The relationship between the Environmental Performance Index (EPI) and the Rule of Law Index (Wolf et al., 2022; World Justice Project, 2022)

The next step is to determine the indicators of the specified least squares model (Table 1), which will allow testing in the Gretl programme and checking the quality of the model in the software environment (Table 2).

Table 1

The least squares model in the Gretl environment based on observations 1-34 (Dependent variable: EPI)

	Coefficient	Std. Error	t-ratio	p-value	
const	21.7046	6.50941	3.334	0.0022	***
RLI	54.3440	9.14149	5.945	<0.0001	***

Table 2

Model quality indicators

Mean dependent var	59.81765	S.D. dependent var	229.4738
Sum squared resid	1380.611	S.E. of regression	9.382978
R-squared	0.524801	Adjusted R-squared	6.568415
F (1, 32)	35.34016	P-value (F)	0.509951
Log-likelihood	-111.2106	Akaike criterion	1.27e-06
Schwarz criterion	229.4738	Hannan-Quinn	226.4211

The White Test found no heteroscedasticity. Test statistic: LM=1.02921 with p-value = $P(\text{Chi-square}(2) > 1.02921) = 0.597737$. Checking the normality of the distribution of the residuals proves the normal error distribution. Test statistic: Chi-square (2) = 1.46024 with p-value = 0.481851. The Chow Test found no structural shifts. Test statistic: $F(2, 30) = 0.736282$ with p-value = $P(F(2, 30) > 0.736282) = 0.487346$.

Another approach involves using the Prosperity Index sub-indicator in the model (Legatum Institute, 2023). Governance, which measures the effectiveness of state authorities, was used as the specified indicator. Figure 2 shows the relationship between the Environmental Performance Index (EPI) and the Governance indicator.

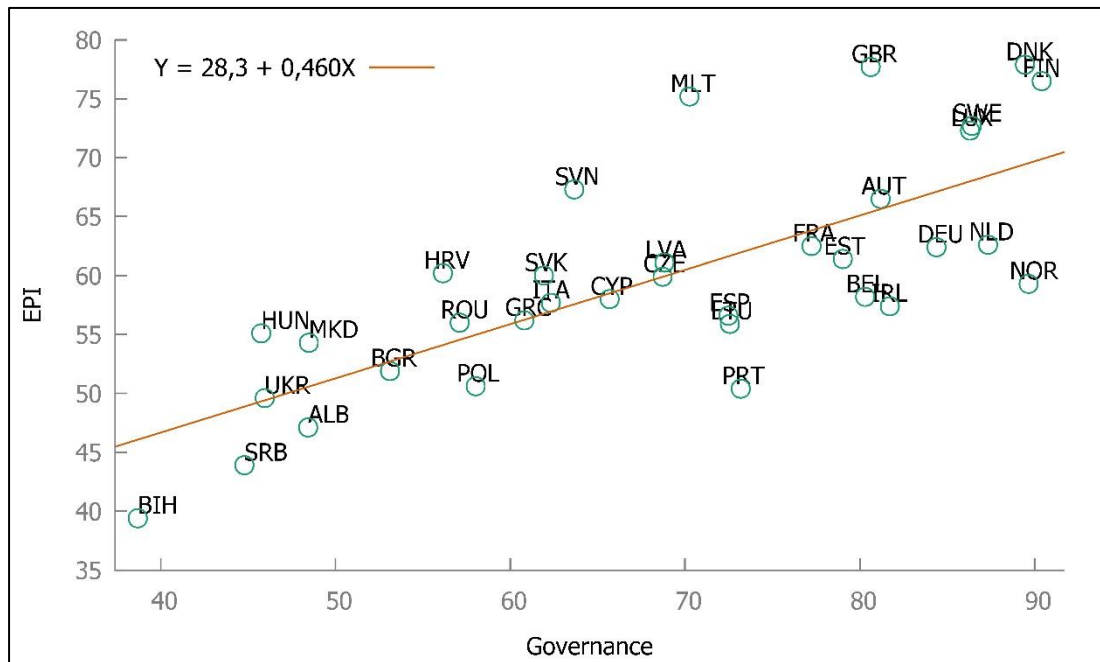


Figure 2. The relationship between the Environmental Performance Index (EPI) and the Governance indicator (Wolf et al., 2022; Legatum Institute, 2023)

The indicators of the specified least squares model (Table 3) will be determined, which will allow testing in the Gretl programme and checking the quality of the model in the software environment (Table 4).

Table 3

The least squares model in the Gretl environment based on observations 1-34 (Dependent variable: EPI)

	Coefficient	Std. Error	t-ratio	p-value	
const	28.2541	5.14972	5.487	<0.0001	***
Governance	0.460375	0.0733962	6.272	<0.0001	***

Table 4

Model quality indicators

Mean dependent var	59.81765	S.D. dependent var	9.382978
Sum squared resid	1303.135	S.E. of regression	6.381454
R-squared	0.551468	Adjusted R-squared	0.537451
F (1. 32)	39.34378	P-value (F)	4.94e-07
Log-likelihood	-110.2288	Akaike criterion	224.4575
Schwarz criterion	227.5102	Hannan-Quinn	225.4986

The White test revealed no heteroscedasticity. Test statistic: LM = 2.45516 with p-value = P (Chi-square (2)>2.45516)=0.293. Checking the normality of the distribution of the residuals proves the normal error distribution. The test statistic: Chi-square (2) = 0.867613 with p-value = 0.648038. The Chow test shows no structural shifts. Test statistic: F (2, 30) = 1.04163 with p-value = P (F(2, 30)>1.04163)=0.365292.

Based on the data obtained from the two model approaches, it can be concluded that the relationship between the Environmental Performance Index (EPI) and the Rule of Law Index has a coefficient of determination $R^2=0.524801$. At the same time, the relationship between the Environmental Performance Index (EPI) and the Governance indicator has a coefficient of determination $R^2=0.551468$. The latter model more accurately reflects the existing relationships, although the results are quite close in general.

Indicators of the Sustainable Development Index (SDI) (Figure 3) demonstrate that, in general, the results of European countries and Ukraine are quite high, ranging from 86.8 (Finland) to 71.4 (Montenegro). Ukraine has a relatively acceptable result (76.5), even in comparison with European countries.

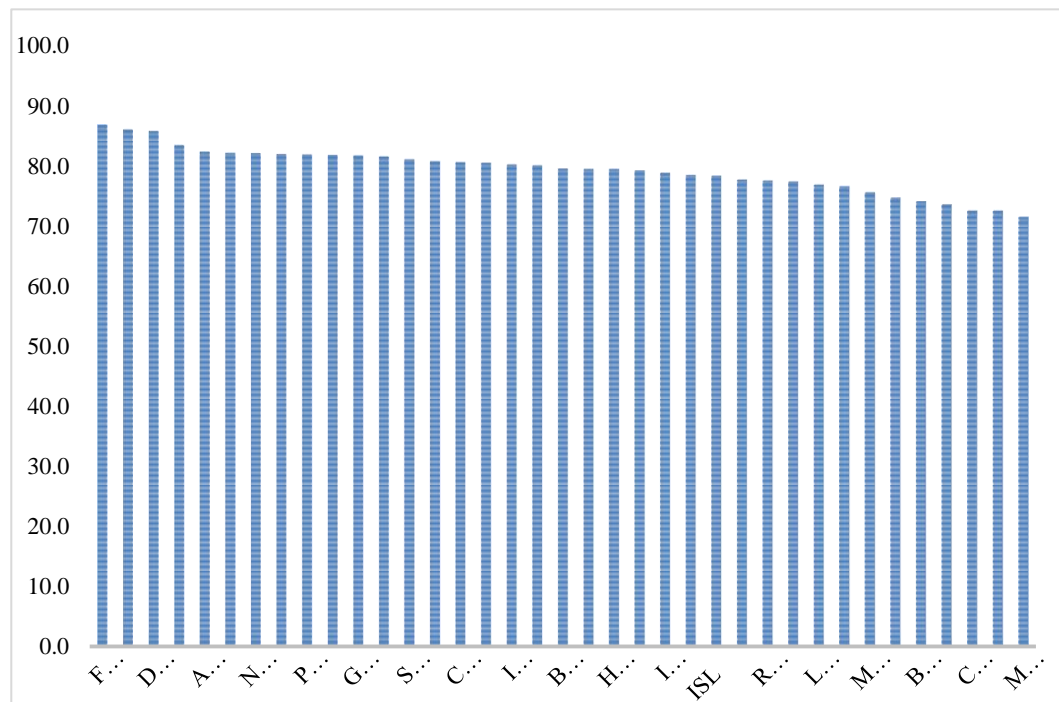


Figure 3. Sustainable Development Index of some European countries and Ukraine, 2023 (Sachs et al., 2023).

At the same time, positive environmental changes are one of the results of the implementation of issues related to the provision of constitutional human rights to a safe environment in the governance system. An important aspect is the analysis of changes in the Environmental Performance Index of some European countries and Ukraine (Figure 4) over the last 10 years, in other words — the

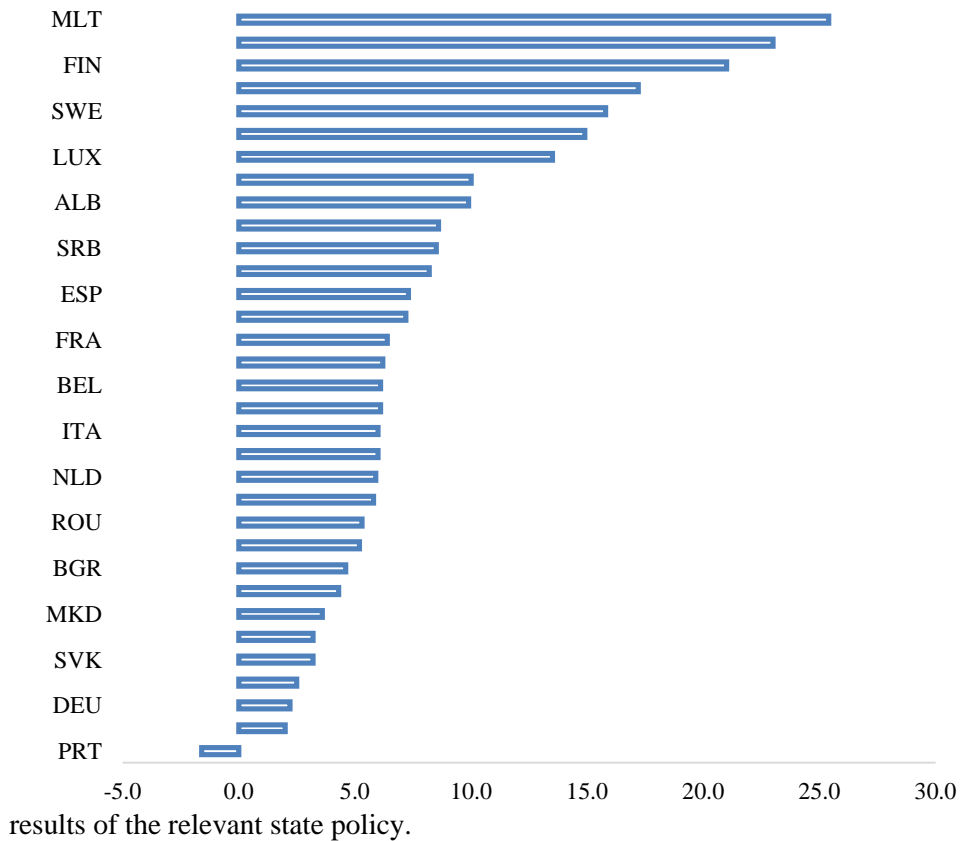


Figure 4. Progress of the Environmental Performance Index of some European countries and Ukraine over the last 10 years (Wolf et al., 2022)

The specified distribution of progress demonstrates certain results of applying the ecosystem approach to the realisation of human rights in a safe environment. It can be concluded that the implementation of the sustainable development concept and compliance with the principles of the rule of law in most countries made it possible to ensure significant progress. Portugal's negative results can be partially explained by the decline of certain areas (loss of wetlands, the consequences of increasing negative impact of harmful substances in the

process of an unbalanced climate policy) (Wolf et al., 2022; OECD, 2023). Household waste generation is growing faster than the economy, which, for example, caused Portugal to generate more household waste per capita in 2020 than the European average. Although, in general, the indicator of Portugal's Environmental Performance Index is quite high, certain policies of the country did not allow it to achieve significant progress in comparison with other European countries.

Discussion

A safe environment is a need for both the social sphere and economic activity. Existing studies confirm that environmental degradation leads to a decreased economic growth of a country, as well as to an increased amount of carbon dioxide, air pollution, and changes in land use (Zafar et al., 2020). On the other hand, the economic activity of countries is growing due to industrialisation, which increases the emission of pollutants that harm the environment (Kim, 2020). However, the empirical search for a connection between the guarantee of constitutional rights to a safe environment and the result of the existing ecological environment is quite a difficult task.

The research aims to focus on certain limitations of the used methodology. First, it should be noted that the study was based on data from European countries, where a high level of human rights, including environmental ones, is guaranteed. Besides, modern approaches in the system of public management, namely the concept of sustainable development goals and greening of management, contributed to the achievement of a high level of environmental performance. The proposed models of the impact of governance on environmental performance were based on the latest available data, although the inclusion of a wide time in the model can more accurately adjust the existing models and their significance. Besides, the use of data from Ukraine, as a representative of the countries of Eastern Europe, fits into the general model, in which mainly the countries with a high level of the indicators used were located.

Regarding the proposed approaches and obtained results, it can be noted that the interconnection between human rights and the environment is mentioned in the research of scholars with a range of complex issues such as sustainable development, climate change, and poverty reduction (Lewis, 2018). In another study, it has been confirmed that the effective use of economic growth can reduce greenhouse gas emissions, considering the use of the rule of law index in assessing the compliance of industrial and production sectors with environmental stability. Evidence suggests that a higher Rule of Law Index may be associated with lower

emissions (Furkan et al., 2023). In this case, the specified approach is a narrower analysis of the situation.

The results obtained support the view that weak institutions are the main obstacle to the formulation and regulation of environmental policy, the implementation of green technologies, and modern energy structures (Slesman et al., 2015). The use of the Rule of Law Index is a separate vision. Recent studies have considered the rule of law as a foundation of institutional quality, analysing its impact on the quality of the natural environment (Arminen & Menegaki, 2019).

It should also be noted that there is only a relative correlation between the consequences of guaranteeing human rights to a safe environment and the real state of the ecological environment. The problem is difficult because of the need for economic growth, which cannot be built entirely on “green” technologies or rapid overcoming of the climate crisis in the current conditions. Several questions and problems arise on the way to the effective implementation of the ecosystem approach to guaranteeing the constitutional right of a person to a safe environment. The following should be noted based on the key problems identified in the research related to the ecosystem approach.

Ecosystems are complex and interconnected systems with various components, which complicates their understanding and comprehensive governance. Balancing human needs and ecological integrity can be complex because of the interrelationships between different species and elements. The integration of elements of an ecosystem vision into existing legal acts and policies requires a sufficiently lengthy period and the implementation of a significant number of goals across various areas of activity. The legislative focus on meeting human needs in the realms of economics, private property, and other directions may significantly hinder the implementation of environmental standards.

.Moreover, it is necessary to talk about the intersection of interests of public authorities, business entities, and public environmental organizations and the emergence of contradictions in the implementation models of the ecosystem approach on this basis. Based on the above, the issue of strengthening ecological approaches will require finding compromises and the availability of up-to-date data on changes in ecological systems and their consequences for local communities and the country. The task of implementing the ecosystem approach is not local within the boundaries of one country but will require coordinated actions by most countries worldwide, despite existing peculiarities of political, economic, or cultural character.

Considering that short-term economic needs can divert goals for improving the environmental situation, institutional capacity and effective governance become crucial. The weakness of state institutions, manifestations of

corruption, and inadequate enforcement of environmental laws can hinder progress. Accelerating the effects of climate change exacerbates the challenges associated with ecosystem management. Solving these problems requires collective efforts of the state, civil society, and international organisations. An ecosystem approach should be integrated into national constitutions, legislation, policies, and educational programmes to promote a deeper understanding of the relationship between nature and human well-being.

Based on the need to obtain wider empirical results on the observance of human rights to a safe environment, other approaches should use the available data on the vast majority of countries in the world to identify problematic issues in developing countries.

The academic novelty of the study implies a comprehensive analysis of the ecosystem approach as a means of guaranteeing the constitutional right of a person to a safe environment for life. While the existing studies mostly focus on either environmental issues or human rights protection in a narrowly specialised manner, this study integrates these two areas, emphasising the symbiotic relationship between the state of ecosystems and human well-being. The developed proposals and recommendations for politicians, legislators, and other interested parties can be used in the process of forming measures to support the ecosystem approach to achieve a balance between human rights and environmental protection. The potential future directions of research could include legal mechanisms for implementing constitutional human rights in a safe environment based on an ecosystem approach in countries with varying levels of economic development.

Conclusions

In the modern paradigm of sustainable development, ensuring constitutional rights to a safe environment for individuals can be realised through an ecosystem approach, which involves the interconnectedness and mutual influence of society and the state of the environment. Recognising the precarious balance between the ecological state and humanity, research on this issue identifies possible directions for addressing complex global challenges, such as environmental degradation and catastrophic consequences of climate change.

Despite certain positive outcomes of implementing the ecosystem approach, significant contradictions in the interests of stakeholders and the complexity of their reconciliation are apparent. To enhance decision-making capabilities, a key direction could be the availability of objective data and the use of effective mechanisms of government monitoring and control. Strengthening the ecosystem approach involves improving the regulatory framework and adapting it

based on the environmental priorities of government authorities. Only a shared vision at the state level, involving businesses, environmental organisations, and the public, will enable coordinated decisions. Drawing on constitutional norms regarding human rights to a clean environment, state policy must strike a balance between the goals of economic development and effective environmental measures and conservation standards.

Thus, the ecosystem approach can be defined as a modern concept for protecting the constitutional rights of individuals in a safe environment. Unfortunately, achieving this goal is a complex process requiring the combination of interests of stakeholders to achieve sustainable development objectives. A key direction is the integration of the ecosystem approach into the state governance system, allowing the enhancement of environmental standards and the improvement of ecosystem conditions. By implementing the concept of the ecosystem approach as a crucial direction for environmental protection and guaranteeing human rights, society can realise a model of a safe environment and sustainable social development.

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