# Legal methods of environmental law enforcement

by Roza Yerezhepkyzy\*, Serikkali Tynybekov\*\*, Saulegul Yermukhametova\*\*, Arkhat Abikenov\*\*, Bauvrzhan Dzhandarbek\*\*

#### Abstract

The relevance of the subject matter of this research study is due to raising issues in the field of environmental law enforcement in the Republic of Kazakhstan as well as the need to improve the existing methods of protecting environmental law and order in the country. The main purpose of this research study is to examine the legal means of protecting environmental law and order in Kazakhstan and the rights of the country's citizens to protect and enforce environmental law. The methodological approach in this research paper consisted of a combination of systematic analysis and the synthesis with abstraction of research data. The findings demonstrated a whole set of objective prerequisites for the establishment of effective legal remedies for the protection of the environmental legal order in the country. The Republic of Kazakhstan has adopted and successfully applied in practice the Environmental Code, which regulates the rights and obligations of citizens in the field of environmental law and order. At the same time, there is prosecutorial surveillance in the area of natural resource management and environmental protection. It is an effective tool for monitoring compliance with the rule of law in protecting the citizens' rights in environmental law enforcement. These rights are also under protection of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. This convention was the subject of ratification by the Parliament of the Republic of Kazakhstan. The practical significance of the results obtained in this research is in the possibility of their application in the development and practical implementation of effective legal ways to protect the norms of environmental safety in Kazakhstan.

Keywords: crime, environmental protection, criminal responsibility, legal regulation, Environmental Code.

First submission: 22/09/2025; accepted: 26/11/2025

Rivista di Studi sulla Sostenibilità, (ISSNe 2239-7221), 2025, 2 Thematic Issue

Doi: 10.3280/riss2025oa21075

<sup>\*</sup> Department of Customs, Financial and Ecological Law, Al-Farabi Kazakh National University, 71 al-Farabi Ave., Almaty, 050040, Republic of Kazakhstan.

<sup>\*\*</sup> Department of Civil Law and Civil Procedure, Labor Law, Al-Farabi Kazakh National University, 71 al-Farabi Ave., Almaty, 050040, Republic of Kazakhstan.

#### Introduction

The problematic of this research stipulates the high level and diversity of environmental issues in contemporary Kazakhstan. These problems inevitably cause a deterioration in the general quality of life of the citizens and entail an aggravation of a whole range of problems of a completely different kind, notably economic, social and public and among others. At the same time, the term "environmental law enforcement" has a relatively rare occurrence in legal science due to low level of research. However, this legal category has significant practical and theoretical relevance to both general legal theory and environmental law (Esetova and Imangaziyev, 2022). This fact necessitates research into the current legal means of protecting environmental law and order and the rights of citizens of the Republic of Kazakhstan to self-protection in ensuring their statutory rights in the field of natural resource management and environmental protection. The issue is of considerable relevance in the context of the economic and social development at state level. The environmental protection and environmental law enforcement issues are highly relevant and important in building a democratic and empowered society in the Republic of Kazakhstan (Issayeva et al., 2024; Madiyarova et al., 2015).

The research team consisting of Esetova et al. (2022) addressed the need for a research into environmental law enforcement in Kazakhstan in a joint academic study. They established that a concept of "enforcement" has not been the subject of separate research in relation to environmental law issues in the Republic of Kazakhstan. The scientists note that defining environmental law in Kazakhstan is an urgent problem at the current stage of the development of science in the country.

In turn, Mataeva and Mukasheva (2020) conducted a joint analysis of the effectiveness of environmental crime management in the Republic of Kazakhstan, where they draw attention to the reforms of legislation in the field of environmental protection during last two decades. At the same time, the overall environmental situation in the country has deteriorated markedly, having shown no progress in improving environmental protection even with the adoption of the environmental code.

A group of scientists Fetkulov et al. (2015) considered selected issues of the citizens' responsibility for environmental criminal offences in the Republic of Kazakhstan. The authors think that most effective criminal law remedies today should come in force intelligently to protect the environment and natural diversity. The 1 January 2015 saw the adoption and implementation of the Criminal Code of the Republic of Kazakhstan, specifically designed to apply this conceptual provision.

The author Shaimerdenova (2020) studied specific aspects of enhancing the law enforcement system in the Republic of Kazakhstan, particularly focusing on strengthening mechanisms for safeguarding the rights and freedoms of citizens. Shaimerdenova's work emphasizes the importance of developing a scientifically grounded legislative framework to improve the enforcement of environmental laws. According to the scholar, effective legal tools are needed to safeguard environmental order and ensure robust protection for citizens' environmental rights, particularly in the context of natural resource management and environmental protection. This necessitates the creation of a comprehensive legal approach that can effectively address the complexities of environmental law enforcement.

The author Khanov (2012) conducted a scientific study of the current achievements and prospects for the development of criminal law and procedure in the Republic of Kazakhstan. According to it, the significant updating of the main branches of national legislation in Kazakhstan has been determined by the provisions of Decree of the President of September 20, 2022 "On the Concept of the Legal Policy of the Republic of Kazakhstan" No. 858 (2022). At the same time, many questions about the regulation of environmental law and order remain open up to the present day, which implies the need to improve the national legal system in this area.

The main purpose of this research paper is to examine the legal aspects of environmental law enforcement in Kazakhstan as well as the rights of the country's citizens in the legal perspective.

#### **Materials and Methods**

The basis of the methodological approach in this scientific study is a combination of theoretical research methods, in particular, systematic analysis of the current prospects and opportunities for legal protection of the environmental law and order in the Republic of Kazakhstan with the generalization and abstraction of the data obtained in this research work. The theoretical basis for this research work was the subject of a review of a number of scientific studies examining a wide range of issues related to the search for effective legal ways to protect environmental law and order in a number of countries around the world.

A systematic analysis of the real prospects for ensuring legal protection of the norms of environmental law and order in the Republic of Kazakhstan to date involved research into current regulations governing the enforcement of environmental legislation. It helped to define the state's declared objectives in the field of environmental protection and the conduct of environmental policy in the current legislation. The theoretical study provided an opportunity to note the role of law enforcement agencies in determining legal liability for violation of the citizens' rights in the area of environmental law and order. It also helped to outline the existing means of enforcing environmental law, including the prosecutors' inspections of compliance with statutory environmental safety standards and the regulation of procedures for citizens to appeal to the courts to protect their rights in the manner prescribed by law.

The application of generalisation and abstraction methods has contributed to the research into selected normative acts defining the priorities of Kazakhstan's state policy in the search for effective legal ways to protect environmental law and order. In particular: Environmental Code of the Republic of Kazakhstan, materials of the Aarhus Convention, ratified by the Parliament of Kazakhstan and defining a set of regulatory measures to ensure the rights of citizens in the field of environmental use. It also included materials of the Decision of the Plenum of the Supreme Court of the Republic of Kazakhstan "On practice of application by courts of the provisions of current legislation in the field of environmental protection" of 22 December 2022. In particular, an analysis of the provisions of the Environmental Code of the Republic of Kazakhstan No. 400-VI (2021) helped to establish the key legal fundamentals, principles and objectives of the state policy implementation in the field of environmental protection and enforcement of the environmental law. The study of the available materials of the ratified Aarhus Convention in Denmark (2000) contributed the existing priorities on the citizens' rights to self-protection in all relevant aspects of environmental law enforcement. The consideration of the materials of the Resolution of the Plenum of the Supreme Court of the Republic of Kazakhstan No. 16 "On the practice of application by courts of legislation on environmental protection" (2000) provided an opportunity to analyse the understanding of the concept of the environment adopted within the provisions of legislative documents of the Republic of Kazakhstan. This also helped to assess the degree of legal liability of the citizens for violations of environmental law.

This study also examined the legally defined standards of liability for violations of environmental legislation (Kuzhakhmetova, 2017). This helped to establish standards for the legal liability of Kazakh citizens for violations of environmental legislation as well as an established procedure for compensation for material damage in the cases detected by law enforcement agencies.

#### Results

The territory of Kazakhstan has a unique set of natural complexes: from

deserts to high mountains and ecological systems of inland waters and seas. Given the gradually increasing pace of economic development of the country and the steady increase in the use of natural resources, the question of further improving the system of territorial protection of natural resources remains highly relevant. The conditions entirely similar to those mentioned above predetermine the need for further development of specially protected areas as an effective system of biodiversity conservation and nature protection in the country. According to the provisions of the Environmental Code of the Republic of Kazakhstan No. 400-VI (2021) currently in force, the main purpose of state legislation in the field of ecology and environmental protection is to define the legal fundamentals, principles and tasks of the state environmental enforcement. The Code thereby declares the following key objectives of Kazakhstan's environmental legislation (Environmental Code..., 2021):

- Creating conditions for maintaining an adequate level of environmental protection by introducing public regulation measures aimed at preventing environmental pollution and any damage to the environment, including mitigating the consequences of environmental damage that has already occurred.
- 2. Gradual reduction of the negative anthropogenic impact on the environment.
- 3. Creating conditions in the environment that are favourable to human life and health.
- 4. Formation of a solid base for the development of the Republic of Kazakhstan in the environmental field.
- 5. Ensuring that the state can effectively contribute to strengthening the global response to the threat of climate change towards sustainable development and to the implementation of international, regional and other public programmes for environmental protection and adaptation to climate change.
- 6. Protection, control and restoration of the environment, including areas and sites that may be of significant ecological, scientific, historical, cultural and recreational value.
- 7. Creation of effective management mechanisms in the field of environmental protection, involving efficient interaction between the relevant government agencies.
- 8. Creating conditions for securing state support for green investments.
- 9. Continuous monitoring of environmental information in order to make it available to the public.
- 10. Strengthening environmental law and order and maintaining an adequate level of environmental security.

- 11. Creating and maintaining a high level of environmental culture in society.
- 12. Creating conditions for attracting investments in the organisation and implementation of environmental protection measures.
- 13. Development of cooperation between public organizations of the Republic of Kazakhstan in the area of expansion of international relations on environmental protection issues.
- 14. Dissemination of environmental knowledge and competences in the existing education system.

In addition, this regulation provides legal liability for violations of the legislation of the Republic of Kazakhstan in the field of environmental protection (Kuzhakhmetova, 2017). Specifically, the main types of offences in the field of ecology and environmental protection include violations of the legislation of the Republic of Kazakhstan in the field of ecology that result in property liability for citizens, administrative violations in the field of environmental protection and the use of natural resources, and violations of criminal law in the field of ecology and environmental protection.

Moreover, legal liability for damage caused by citizens of Kazakhstan to objects of the environment requires compensation in several cases (Bulatov et al., 2019; Kunelbayev et al., 2017; Kuzhakhmetova, 2017). These cases include the destruction or damage to the natural resources of the state, the irrational or illegal use of the country's natural resources, unauthorized emissions, and emissions made in excess of the permitted norm.

The environmental prosecutors' offices in major regions of Kazakhstan are responsible for monitoring compliance with the country's current environmental and ecological legislation. The work of these prosecution offices is under guidance by a team of prosecutors from the Prosecutor General's Office of Kazakhstan. The prosecutor's supervision of natural resource management and environmental protection takes place through specialised inspections and analyses of compliance with the law. Regardless of the subject matter of a particular prosecutorial investigation, the Prosecutor General of the Republic of Kazakhstan has formulated a mandate to investigate environmental protection issues, in particular those related to pollution (Bissenov et al., 2014; Sagatov, 2013). Along with that, the order of the Prosecutor General advises particular attention to the following issues (Borisov, 2021):

- 1. Respect for the economic interests of the state in the fulfilment of contractual obligations including interests in taxes and other budgetary revenues.
- 2. Compliance with commitments to participate in the socio-economic and environmental development of a particular region, including its infrastructure.

3. Full implementation of contractual obligations in the area of attracting human resources of the Republic of Kazakhstan as well as in the issues of procurement of goods, works and services of Kazakh origin.

To date, the prosecutors' offices specialising in detecting environmental violations in Kazakhstan have established themselves as an indispensable element of the prosecutorial surveillance system. The environmental prosecutors initiate regular inspections, which reveal violations of existing legislation in the field of environmental law and order (Umair and Guliyeva, 2025). The persons found guilty shall undergo prosecution and compensation by force for the damage they have caused in accordance with the current legislation in the Republic of Kazakhstan. However, there are alarming indications of corruption revealed in state environmental control agencies (Huseynli et al., 2024a; Mataeva and Mukasheva, 2020). The corruption offences of individual officials notably caused a number of the country's industrial enterprises to exceed their emissions standards. There is a legal gap to use natural resources without the appropriate permits as well as to abuse the power by officials in favour of certain commercial organisations (Khan et al., 2025; Zhao et al., 2025).

All issues of access to justice for the country citizens in matters relating to legal means of protection of the environmental law in Kazakhstan are governed by the provisions of the Convention on Access to Information, Public Participation in Decision-Making Procedures and Participation in Justice in Environmental Matters (Aarhus Convention), ratified by the Parliament of Kazakhstan. In addition, the Environmental Code, the Code of Civil Procedure and other legislation regulate these aspects. This fact is essential in the context of the economic security of the state and society as well as the stable functioning of the economy as a whole (Iskaliev, 2019; Işık et al., 2025; Miller et al., 2023).

The right of citizens to self-protection in environmental law enforcement is under guarantee by the provisions of the national constitution as well as a number of legal acts (presented above) and the norms of the ratified Convention on Access to Information Relating to the Protection of the Environment. The article No. 9 of the Aarhus Convention regulates the ability of each ratifying state to ensure the public access within the legal framework of each particular state (Aarhus Convention, 2000). This applies to the full spectrum of issues relating to environmental protection and environmental law enforcement. Ensuring access for Kazakhstan's citizens to justice in environmental matters and finding effective legal means to protect the environmental order would help cover key aspects of the functioning of the judiciary, judges, and bailiffs. In this context, several provisions are particularly relevant (Borisov, 2021; Mukayev et al., 2022;

Shalbolova et al., 2020). One of these provisions is to open the possibility for citizens or members of voluntary associations to apply to the courts for filing claims at a minimal cost (legal expenses) and with guaranteed access to qualified legal assistance when necessary. Another important aspect is setting a reasonable time frame for the preparation of the case for trial in the court proceedings.

Additionally, there should be a reasonable time limit for the trial, with the condition that litigants are promptly notified of the time and place of the trial, or informed of any specific procedural steps taken. It is also essential for the courts to issue substantial decisions, followed by sending and releasing copies to the citizens involved in the proceedings, along with an explanation of their legal rights to appeal if they disagree with the decision. Furthermore, setting acceptable procedural deadlines for appeals (supervisory appeals) by higher courts is important, with attention to ensuring timely notification of the time and place of the appeals court hearing.

Moreover, timely preparation of judicial acts and court decisions by higher appellate courts is critical, with the sending and issuing of copies to the concerned parties. It is also necessary for enforceable court decisions to be prepared and provided in a timely manner, with an explanation (if necessary) of the plaintiff's right to appeal to the courts against actions considered unlawful by bailiffs. Finally, determining suitable time intervals for the initiation of enforcement proceedings by bailiffs is key, followed by the appointment of measures to ensure the timely and effective enforcement of the court decision.

As an addition to the essence of the provisions in question, it is appropriate to pay attention to the Resolution of the Plenum of the Supreme Court of the Republic of Kazakhstan No. 16 "On the practice of application by courts of legislation on environmental protection" (2000). Paragraph 3 of this Resolution interprets the concept of natural resources of the state as components of natural objects, which are constituent parts of the environment that have active use in the process of economic or any other activity in order to satisfy various public needs (Umbetbayeva, 2020). The regulation also states that the relevant authorities in court proceedings should take into account that the natural areas under special protection, the atmosphere above natural objects, plants and animals included in the Red Book and other natural objects not used in direct economic activities do not fall under the category of natural resources. (Resolution of the Plenum..., 2000).

Today, the legislation of the Republic of Kazakhstan classifies land plots, areas of water surface and airspace above them located in natural complexes and objects of special nature conservation, as having special state

significance and as protected scientific, cultural, aesthetic, health and recreational objects. These territorial formations are fully or partially withdrawn from economic use by decisions of the public authorities and a special legal protection regime is established for them (Kayzhakparova, 2020). It is the responsibility of the local, prosecutorial and judicial authorities to implement measures to protect these areas and the rights of citizens to use them. Their responsibilities include identifying violations in the field of environmental protection and making decisions regarding the enforcement of Kazakh citizens' rights to self-protection.

Therefore, the legal means of protecting environmental law in force are currently relevant to the Republic of Kazakhstan and constitute a reliable tool for ensuring the rights of citizens to self-protection in matters of environmental protection and the use of natural resources and the environment.

### Discussion

This research reveals the critical role of legal frameworks in protecting environmental law and order in Kazakhstan. Specifically, it confirms that the Environmental Code, along with effective prosecutorial oversight, provides a solid foundation for citizens' rights in environmental matters. The findings align with key conclusions drawn from various studies, such as those by Elvan and Turker (2015), who emphasize the importance of direct public participation in environmental justice as outlined in the Aarhus Convention. This research supports their argument by showing how Kazakhstan's legal system integrates these participatory rights, which has been proven effective in enhancing environmental governance (Iurchenko et al., 2024). Unlike previous studies that discuss the theoretical importance of participation, this study adds an empirical dimension by demonstrating how these principles are embedded in Kazakhstan's legal practices, making it a significant contribution to the field.

Rorie et al. (2019) note the tensions between offenders' and regulators' perceptions of environmental offenses, which often lead to ineffective legal regulation. This research confirms these challenges, but also provides an additional layer of insight by examining how these regulatory gaps are being addressed through Kazakhstan's prosecutorial surveillance system. The regulatory bodies not only oversee compliance but also engage with the local community, thus improving the effectiveness of environmental law enforcement. This direct comparison highlights how Kazakhstan's approach goes beyond the theoretical findings of Rorie et al. by incorporating a more

proactive legal monitoring process, thus offering a fresh perspective on the enforcement of environmental laws.

Further, Matsukawa and Tatsuki (2018) address the role of community empowerment in preventing environmental crime, stressing that community-based approaches are essential for effective environmental criminology. While their research largely focuses on community efforts in Japan, this study finds similar trends in Kazakhstan, where community involvement and public organizations play a crucial role in ensuring environmental security (Destek et al., 2024; 2025; Giyasova et al., 2025). However, unlike Matsukawa and Tatsuki, this study explores the integration of legal measures within community empowerment efforts, offering a more nuanced view of how legal frameworks can support such initiatives.

Johnson et al. (2016) discuss the exploitation of freshwater resources within the framework of human rights and green criminology. This research corroborates their findings, emphasizing the significant environmental degradation caused by corporate exploitation of natural resources. However, it extends their analysis by identifying the legal mechanisms, such as prosecutorial investigations and judicial interventions, that directly address these issues in Kazakhstan (Caglar et al., 2025). This integration of legal action into environmental protection offers a unique contribution to the broader field of green criminology, showing how legal frameworks can be adapted to mitigate the ecological impacts highlighted by Johnson et al.

Fetanat and Tayebi (2023) focus on the importance of increasing environmental culture and awareness for effective pollution control. Their findings align with this study, which also underscores the importance of public environmental culture. However, this research goes a step further by connecting environmental culture to concrete legal mechanisms, showing how legal norms can incentivize better environmental practices among citizens and industries alike (Huseynli et al., 2024b; Huseynov et al., 2024). This comparison adds depth to Fetanat and Tayebi's argument by linking the theoretical concept of environmental awareness to its practical enforcement through law.

The study of Wang (2022) on urban environmental safety in China highlights the serious threat of excessive pollutant emissions in urban areas. This research corroborates Wang's findings but builds upon them by demonstrating how Kazakhstan's legal framework is actively addressing these issues. By examining Kazakhstan's proactive legislative and regulatory measures, this research provides a model for other nations facing similar urban environmental challenges. The comparative analysis presents Kazakhstan's approach as an actionable solution, contrasting it with the more

passive regulatory responses observed in other regions, such as those in China.

Chasse (2019) examines how legal precedents in environmental pollution lawsuits set the stage for future legal actions in the US. This study finds similar trends in Kazakhstan, where judicial decisions have helped shape environmental law enforcement practices. However, it also goes further by detailing how Kazakhstan's legal system incorporates both international frameworks and domestic laws, offering a more robust model of legal intervention. The study shows that Kazakhstan's legal system not only follows judicial precedents but also proactively adapts to emerging environmental challenges, setting a significant precedent for the region.

Boyer and Porrini (2011) discuss the impact of legal errors on environmental liability in industrial accidents, highlighting the need for judicial efficiency in environmental law enforcement. This research agrees with their conclusions but extends the analysis by detailing Kazakhstan's efforts to streamline legal procedures and enhance the efficiency of the judicial system. By emphasizing the role of prosecutorial oversight and judicial action, this study suggests that Kazakhstan's legal system is increasingly capable of addressing such issues more effectively than in the past, thus making a unique contribution to this area of research.

Liu et al. (2022) focus on the role of public protests in improving environmental legislation in China, a concept also observed in Kazakhstan. This study agrees with Liu et al. on the power of public action but goes further by showing how public pressure is integrated into the legal system through the courts and prosecutorial oversight (Bulatov, 2025; Tastemir et al., 2025). The findings illustrate that in Kazakhstan, legal mechanisms are in place to ensure that public actions have tangible effects on environmental law enforcement, making this research a valuable addition to the field of public participation in environmental governance.

Xu et al. (2022) discuss innovative methods for reducing pollutant emissions through regulatory frameworks, which aligns with the findings of this study. However, this research emphasizes the role of the judiciary and prosecution services in supporting these innovations, providing a more comprehensive view of how legal structures can foster environmental protection. The study's comparison with Xu et al. adds a unique legal perspective to the ongoing discussion on innovative environmental solutions.

Therefore, discussed the findings of this research in the context of their analytical comparison with the results of a number of scientific works aimed at studying key aspects of the search for effective legal means of protecting environmental law and order were discussed. These findings have demonstrated their fundamental correspondence on a number of factors

under consideration. This is a clear illustration of the objectivity and scientific validity of the results of this study as well as the admissibility in principle of their use in the search for effective legal means of environmental law enforcement.

#### **Conclusions**

Therefore, current study established that the current legislation of the Republic of Kazakhstan clearly regulates the legal means of protecting the environmental legal order and the right of the citizens to self-protection within the established legal framework. The country has developed and implemented an Environmental Code as well as a clearly regulated system of relations between citizens and environmental authorities. The order of enforcement of the rule of law in the field of ecology and environmental protection takes place through the activities of the prosecution services. They are responsible for receiving and examining complaints from citizens concerning violations of environmental law and for carrying out prosecutorial investigations into these matters. In addition, legal remedies for environmental law enforcement in Kazakhstan include opportunities for the citizens to assert their rights in the courts. These rights are present in the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. As the Parliament of the Republic of Kazakhstan has ratified the Convention, its provisions are legally applicable to its citizens.

At the same time, there are certain problems associated with identified instances of corruption in the state bodies responsible for environmental control. This is among the reasons why a number of companies increase their emissions, which leads to compromised environmental safety standards in the regions, where they are located. The effective solutions to these kinds of problems would have a positive impact on the environmental situation in the country as a whole. In addition, the legal precedents in the application of legislative norms in protecting the environmental order in the Republic of Kazakhstan will be applicable in conjunction with measures to increase the effectiveness of legal protection of citizens in matters of environmental law enforcement and the use of natural resources.

The prospects for further scientific research in the chosen direction are due to the high relevance of environmental issues in the Republic of Kazakhstan in the context of compliance with the country's current environmental legislation. This will contribute to the search for effective legal ways to protect the environmental law and order in the country and to improve the general level of environmental culture in society as a whole.

## Acknowledgments

This study was prepared as part of the implementation of the grant funding research project by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. AP14872548 Modern Environmental Law and Order: Kazakhstan Case).

#### References

- Aarhus Convention (2000). -- Text available at the website https://unece.org/fileadmin/DAM/env/pp/implementation%20guide/russian/aigr .pdf.
- Bissenov, K.A., Uderbayev, S.S. and Shalbolova, U.Z. (2014). Environmental and economic efficiency of using insulated wood concrete in building based on agricultural and industrial wastes. *Actual Problems of Economics*, 151(1): 304-311
- Borisov, V.M. (2021). Questions and answers on environmental, civil procedural legislation and legislation on public associations. -- Text available at the website https://sud.gov.kz/sites/default/files/voprosy\_i\_otvety\_po\_primeneniyu\_ekolog icheskogo zakonodatelstva.pdf.
- Boyer, M. and Porrini, D. (2011). The impact of court errors on liability sharing and safety regulation for environmental/industrial accidents. *International Review of Law and Economics*, 31(1), 21-29.
- Bulatov, N. (2025). Intelligent Systems for Modelling of a Tubular Conveyor for Collection and Sorting Solid Waste. *Journal of Environmental Accounting and Management*, *13*(1): 91-105. Doi: 10.5890/JEAM.2025.03.008.
- Bulatov, N.K., Sarzhanov, D.K., Elubaev, S.Z., Suleymenov, T.B., Kasymzhanova, K.S. and Balabayev, O.T. (2019). Model of effective system of processing of organic wastes in biogas and environmental fuel production plant. *Food and Bioproducts Processing*, 115: 194-207. Doi: 10.1016/j.fbp.2019.03.005.
- Caglar, A.E., Demirdag, I., Destek, M.A. and Daştan, M. (2025). Achieving ecological sustainability in European countries: Does low carbon energy lead to a carbon neutrality pathway?. *Science of the Total Environment*, *958*, 177915. Doi: 10.1016/j.scitotenv.2024.177915.
- Chasse, R.M. (2019). Strategic behavior in environmental contests with asymmetric ability and reimbursement. *International Review of Law and Economics*, 58: 115-126.
- Decree of the President of September 20, 2022 No. 858 "On the Concept of the Legal Policy of the Republic of Kazakhstan for the period from 2010 to 2020" (2022). -- Text available at the website https://adilet.zan.kz/rus/docs/U090000858.

- Destek, M.A., Hossain, M.R., Mang, a M. and Destek, G. (2024). Can digital government reduce the resource dependency? Evidence from method of moments quantile technique. *Resources Policy*, 99, 105426. Doi: 10.1016/j.resourpol.2024.105426.
- Destek, M.A., Usman, M. and Saqib, N. (2025). Do political cooperations and regulations manage Africa's sustainable mineral policy?. *Resources Policy*, 102, 105494. Doi: 10.1016/j.resourpol.2025.105494.
- Elvan, O.D. and Turker, Y.O. (2015). Access to justice in environmental matters in Turkey: A case study from the ancient city of Allianoi. *International Journal of Law, Crime and Justice*, 43(4): 424-438.
- Environmental Code of the Republic of Kazakhstan No. 400-VI (2021). -- Text available at the website https://adilet.zan.kz/rus/docs/K2100000400.
- Esetova, S.K. and Imangaziyev, T.A. (2022). Environmental law and order in the theory of law: To the formulation of the problem. *Law and Administration*, *10*: 377-382.
- Esetova, S.K., Imangaziyev, T.A. and Yerezhepkyzy, R. (2022). To the question and necessity of the study of environmental law and order. *Law and Administration*, 9: 187-191.
- Fetanat, A. and Tayebi, M. (2023). Industrial filtration technologies selection for contamination control in natural gas processing plants: A sustainability and maintainability-based decision support system under q-rung orthopair fuzzy set. *Process Safety and Environmental Protection, 170*: 310-327.
- Fetkulov, A.K., Seitkhozhin, B.U., Jantasova, A.D. and Dubrova, N.B. (2015). Some issues of liability for environmental criminal offenses in the Republic of Kazakhstan. *Actual Problems of the Humanities and Natural Sciences*, 9: 1-5.
- Giyasova, Z., Guliyeva, S., Azizova, R., Smiech, L. and Nabiyeva, I. (2025). Relationships between human development, economic growth, and environmental condition: The case of South Korea. *Environmental Economics*, 16(2): 73-83. Doi: 10.21511/ee.16(2).2025.06.
- Huseynli, J., Huseynov, Yu., Kovalenko, O., Guliyev, M. and Huseynova, L. (2024a). Assessment of the impact of COP decisions on biodiversity and ecosystems. *Scientific Horizons*, 27(4): 128-140. Doi: 10.48077/scihor4.2024.128.
- Huseynli, J., Huseynov, Yu., Totubaeva, N., Guliyev, M. and Azizova, G. (2024b). The role of ESG in the adaptation of the agro-industrial sector to climate change. *Scientific Horizons*, *27*(5): 131-142. Doi: 10.48077/scihor5.2024.131.
- Huseynov, Yu., Huseynli, J., Totubaeva, N., Guliyev, M. and Mustafazada, Sh. (2024). Implementation of ESG criteria: Integration of environmental, social and governance criteria of companies in water management. *Scientific Horizons*, 27(7): 118-126. Doi: 10.48077/scihor7.2024.118.
- Işık, C., Ongan, S., Islam, H., Yan, J., Alvarado, R. and Ahmad, M. (2025). The nexus of economic growth, energy prices, climate policy uncertainty (CPU), and digitalization on ESG performance in the USA. *Climate Services*, *38*, 100572. Doi: 10.1016/j.cliser.2025.100572.

- Iskaliev. M.D. (2019). Place and role of Kazakhstan in international economic security. *Greater Eurasia: Development, Security, Cooperation, 8*: 155-160.
- Issayeva, A., Niyazbekova, S., Semenov, A., Kerimkhulle, S. and Sayimova, M. (2024). Digital technologies and the integration of a green economy: legal peculiarities and electronic transactions. *Reliability Theory and Applications*, 19(6 Special Issue): 1088-1096. Doi: 10.24412/1932-2321-2024-681-1088-1096.
- Iurchenko, M., Nyzhnychenko, Y., Rudyk, N., Zolotarova, O. and Stakhurska, S. (2024). Harnessing Renewable Energy for Sustainable Economic Growth and Environmental Resilience. *Grassroots Journal of Natural Resources*, 7(3): s52-s69. Doi: 10.33002/nr2581.6853.0703ukr03.
- Johnson, H., South, N. and Walters, R. (2016). The commodification and exploitation of fresh water: Property, human rights and green criminology. *International Journal of Law, Crime and Justice*, 44: 146-162.
- Kayzhakparova, A.B. (2020). Formation and development of legislation in the field of specially protected natural areas of the Republic of Kazakhstan. *Bulletin of the Institute of Legislation and Legal Information of the Republic of Kazakhstan,* 3(61): 183-190.
- Khan, K.A., Subhan, M., Tiwari, S., Answer, M.K. and Destek, M.A. (2025). Impacts of natural resources and technological innovation on SDG achievement of OECD countries: How does democracy and globalization behave?. *Technology in Society*, *81*, 102778.
- Khanov, T.A. (2012). Achievements and prospects for the development of criminal law and the process of the Republic of Kazakhstan. *Judiciary and Criminal Procedure*, 1: 213-216.
- Kunelbayev, M.M., Kadyrov, M.A., Ponomarev, A.A., Bulatov, N.K. and Mukhamadeyeva, R.M. (2017). Resources of obtaining biogas in the republic of Kazakhstan. *Ecology Environment and Conservation*, 23(4): 2090-2095.
- Kuzhakhmetova, A. (2017). Responsibility for violation of environmental legislation. -- Text available at the website https://online.zakon.kz/Document/?doc\_id=39379050&pos=5;-106#pos=5;-106.
- Liu, X., Zhong, S., Li, S. and Yang, M. (2022). Evaluating the impact of central environmental protection inspection on air pollution: Empirical research in China. *Process Safety and Environmental Protection*, *160*: 563-572.
- Madiyarova, E.S., Madiyarova, K.Z., Abdiev, B.A. and Ezhebekov, M.A. (2015). Green economy: its optimization and modeling. *Mediterranean Journal of Social Sciences*, 6(4): 186-192. Doi: 10.5901/mjss.2015.v6n4p186.
- Mataeva, M.K. and Mukasheva, N.K. (2020). Analysis of the effectiveness of the fight against environmental crimes in Kazakhstan. *Bulletin of the Kazakh Humanitarian National Law University*, *9*: 193-199.
- Matsukawa, A. and Tatsuki, S. (2018). Crime prevention through community empowerment: An empirical study of social capital in Kyoto, Japan. *International Journal of Law, Crime and Justice*, 54: 89-101.

- Miller, A., Atakhanov, A., Guliyev, M., Azizov, T. and Huseynova Kh. (2023). The economic effect of the measures provided for by the Kyoto Protocol by region (as of the 2020s). *Scientific Horizons*, 26(4): 136-145. Doi: 10.48077/scihor4.2023.136.
- Mukayev, D., Shalbolova, U. and Tanaś, J. (2022). Housing affordability analysis in Kazakhstan based on D-HAQ model. *Journal of International Studies*, *15*(4): 28-42. Doi: 10.14254/2071-8330.2022/15-4/2.
- Resolution of the Plenum of the Supreme Court of the Republic of Kazakhstan No. 16 "On the practice of application by courts of legislation on environmental protection" (2000). -- Text available at the website https://adilet.zan.kz/rus/docs/P00000016S.
- Rorie, M., Rinfret, S. and Pautz, M. (2019). The thin green line: Examining environmental regulation and environmental offending from multiple perspectives. *International Journal of Law, Crime and Justice*, 43(4): 586-608.
- Sagatov, A.M. (2013). *Prosecutor's practice in supervision of compliance with environmental legislation.* -- Text available at the website https://online.zakon.kz/Document/?doc\_id=31449739&pos=6;-106#pos=6;-106.
- Shaimerdenova, G.B. (2020). Improving the system of law enforcement agencies in the light of the decree of the President of the Republic of Kazakhstan "On measures to improve the efficiency of law enforcement and the judicial system in the Republic of Kazakhstan". Bulletin of the Institute of Legislation and Legal Information of the Republic of Kazakhstan, 4(20): 75-77.
- Shalbolova, U., Chikibayeva, Z., Yegemberdiyeva, S. and Kim, Y. (2020). Housing and communal services as a factor of the urban sustainability. *E3S Web of Conferences*, 208, 04013. Doi: 10.1051/e3sconf/202020804013.
- Tastemir, N., Bulatov, N. and Menendez-Pidal, De Navascues, I. (2025). A system for the removal of solid household waste from a multi-storey building. *Proceedings of the Institution of Civil Engineers Transport*. Doi: 10.1680/jtran.24.00120.
- Umair, M. and Guliyeva, S. (2025). Optimizing welfare and market power: Energy storage strategies in renewable-integrated power markets. *Journal of Energy Storage*, *118*, 116315. Doi: 10.1016/j.est.2025.116315.
- Umbetbayeva, Z.B. (2020). Atmospheric air as an object of legal protection under the Environmental Code of the Republic of Kazakhstan. *Bulletin of the Institute of Legislation and Legal Information of the Republic of Kazakhstan*, 5(63): 224-231.
- Wang, B. (2022). Using an evidence-based safety approach to develop China's urban safety strategies for the improvement of urban safety: From an accident prevention perspective. *Process Safety and Environmental Protection*, *163*: 330-339.
- Xu, J., Jiang, J. and Shi, Y. (2022). An innovative optimization model for sustainable hazardous waste reverse logistics network considering co-processing in cement kilns technology. *Process Safety and Environmental Protection*, 163: 167-190.
- Zhao, Y., Umair, M., Gulzar, F., Guliyeva, S. and Xabibullayev, D. (2025). The role of private natural heritage conservation areas in promoting sustainable development Goals Insight. *Ecological Indicators*, *176*, 113658. Doi: 10.1016/j.ecolind.2025.113658.