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### **Environmental management systems: international models, experience and application in Kazakhstan**

#### ***Annotation***

*Main problem:* in Kazakhstan, the Government is reviewing its environmental and health management system to identify opportunities for improvement. Kazakhstan suffers from a high level of emissions into the environment and related health problems of the population. The link between environmental pollution and public health has been established for a long time. In Kazakhstan, air pollution, water pollution and soil and groundwater pollution are the main causes of widespread health problems and diseases, including, but not limited to, lung diseases and certain cancers. Recognizing these problems, the Kazakh Government is trying to strengthen environmental protection and environmental management system.

*Purpose:* the purpose of the study was to analyze international models, practices, application of management systems for the legal protection of the environment and the health of citizens with application in Kazakhstan.

*Methods:* the article discusses and explores a number of principles and methods of environmental management. Since these principles and practices contribute to the establishment of rational and effective environmental policy and management, it is proposed to take them into account when rethinking the current system in Kazakhstan. The article analyzes models and methods of legal protection of the environment and response to damage to the health of citizens, these tools can be part of an integrated system.

*Results and their significance:* based on the study, it was found that in order for environmental management to reach its full potential, Kazakhstan also needs to undertake political reforms and involve ordinary citizens in the formation of policies and protection mechanisms. The studied strategies for collecting and taking into account the opinions of people when making managerial decisions on environmental protection can be used in Kazakhstani society.

*Key words:* environmental protection and public health; international models and practices; environmental management and legislation; judicial changes; participation of civil society; reforms.

#### **Introduction**

Significant air and water pollution damages the health of citizens of Kazakhstan. Courts and regulatory authorities do not properly perform their duties in the framework of environmental protection. Currently, government agencies are pursuing a policy aimed at protecting the environment and the rights of citizens.

In Kazakhstan, the Government is reviewing its environmental and health management system to identify opportunities for improvement. Kazakhstan suffers from a high level of emissions into the environment and related health problems of the population. The link between environmental pollution and public health has been established for a long time. In Kazakhstan, air pollution, water pollution and soil and groundwater pollution are the main causes of widespread health problems and diseases, including, but not limited to, lung diseases and certain cancers. Recognizing these problems, the Kazakh Government is trying to strengthen environmental protection and environmental management system. In response to the growing pressure caused by environmental degradation, the Government is taking a number of measures aimed at correcting the situation. The Environmental Code of the Republic of Kazakhstan was adopted in 2021.

However, the results of these efforts have been modest at best, and the quality of the environment in Kazakhstan has not improved sufficiently to meet the requirements of public health and safety. A number of shortcomings, such as unclear legislation, lack of resources and state support for law enforcement, local protectionism and limited public participation, were identified as factors contributing to the inefficiency of Kazakhstan's environmental management. It should be noted that

governance also depends on more fundamental political reform. The current governance system does not always encourage environmental governance, and more consideration should be given to models based on transparency, public participation and objective cost-benefit analysis. This article does not discuss the political aspect, but focuses on the governance component.

In any state system, there is a risk of suboptimal protection of the environment and public health. This risk is more significant in a country with multiple levels of government, centralized and decentralized rulemaking and decentralized enforcement. However, it can be reduced by applying a number of principles related to the development, organization and implementation of an environmental management system. In other countries, models and best practices of environmental governance and risk management have been developed that can be useful to Kazakhstan when it rebuilds its environmental management. These models and practices cover the entire spectrum of issues from institutional design to law enforcement.

This article discusses the key models and practices that the Kazakh government should take into account when rethinking the existing system, provides some examples of successes and failures of environmental policy. The first part of this article discusses the development of an environmental management system. Key issues related to the governance structure are considered, including the establishment of institutions and authorities, the distribution of powers, the establishment of procedures, accountability and supervision, as well as remedies (administrative appeal and judicial review). Further in the article we proceed to the implementation of an environmental management system. Attention is paid to limited and discretionary decision-making, sanctions, responsibility and law enforcement. In conclusion, recommendations on the development of a rational environmental policy, general principles of environmental and health policy development, examples of failures and successes of environmental policy application in Kazakhstan will be presented.

The models and best practices presented in this article are not intended to be used as templates that Kazakhstan can implement immediately. Models and practices work in a broader management system. They set the general direction of the state's efforts to improve the management system. It is quite possible that some elements of the models presented in this article will be implemented within a short period of time, while other elements may have to be postponed or they may not even be suitable for the current system of Kazakhstan. As already noted, in order for the environmental and health management system to produce good results, Kazakhstan needs to carry out long-term reforms.

### **Materials and methods**

The main purpose of the study consists of the following stages:

- the first stage includes discussion of key models and practices that the Kazakh government should take into account when rethinking the environmental protection system and policy;
- the second stage includes the transition to the implementation of a management and environmental protection system;
- the third stage includes the development of recommendations for the development of environmental policy in the field of environmental protection and health in Kazakhstan.

The article provides an analysis of international studies devoted to empirical research in the field of environmental protection and the development of environmental policy aimed at ensuring the interests of citizens.

The collected empirical material and its analysis made it possible to identify proposals for the formation and development of a system of environmental protection and human health in the Republic of Kazakhstan.

### **Results**

Environmental and health policy is impossible without a solid institutional framework. Permanent, stable institutions are necessary to ensure effective policy design, implementation and enforcement. The environmental management system is established by legislation adopted by the legislature in accordance with the powers granted by the Constitution. Such primary legislation establishes or defines the necessary institutions, allocates powers and establishes procedures and basic standards.

Primary legislation often empowers an institution to issue implementing regulations. These implementing provisions contain additional procedural and substantive details. To ensure the legitimacy of regulatory acts, the law usually establishes a number of conditions and requirements. For example, an institution cannot go beyond its powers, it must act in accordance with the procedure established by law, and the basic norms set out in the regulations must comply with the norms established in the legislation. If the rules are issued in violation of these requirements, they are

invalid or disputed; in the latter case, the person concerned can challenge them in court in a manner known as judicial review.

Strong institutions and authorities are a prerequisite for the development and implementation of an effective environmental policy. In order for an institution to be strong, it must have adequate staff and experience, as well as the powers that allow it to successfully carry out its mission. The World Bank has identified four key capabilities of effective institutions and effective governance structures: the ability to pick up signals, the ability to formulate balanced policies, the ability to implement policies, and the ability to retain responsibility.

Establishing procedures. Sound procedures are important elements of environmental and public health policy development. Over the past few decades, the idea of which procedures are appropriate and how they should be structured has changed rapidly. Currently, there is a high degree of consensus between opinion leaders in the US and the EU on the basics of such procedures. Procedural cornerstones are transparency and access to information, consultation, factual or scientific data, risk assessment, cost/benefit analysis (or regulatory impact assessment) and regulatory assessment after the fact. The European Risk Forum, an expert-led think tank based in Brussels, has published an action plan to improve risk management in the EU, which reflects many of the best ideas about procedures [1].

Transparency. Many countries have passed laws requiring “open government” and providing access to information held by the Government. In Europe, this practice is commonly known as “transparency”; in US rulemaking, it is known as “notification and comment”. In the EU, for example, citizens have the right to know how European institutions prepare decisions, who participates in their preparation, who receives funding from the EU budget and what documents are stored or produced for the preparation and adoption of legal acts. In addition, citizens have the right to access these documents and announce their opinions directly or indirectly through intermediaries [2]. Information on legislative activity is available on EU websites, and there is also an online “registry of Comitology”, which provides access to draft measures to be taken under the Comitology procedure.

Transparency also extends to decision-making in the development and implementation of environmental and public health policies. In some jurisdictions, such as the EU, there is special legislation regulating the “right of a citizen to know” in the field of the environment. The idea is that transparency not only corresponds to the rights of citizens, but also improves the quality, reliability and legitimacy of decision-making, as well as consistency in their execution. Thus, it is considered that environmental decision-making is best done in a transparent manner, which implies timely notification and access to information.

Consultations. The idea is that any person or any interested person should be able to comment on the proposed rules and draft decisions that concern this person. Like transparency, consultations are designed to ensure that the exercise of power is in the public interest. Experience shows that it is advantageous for regulatory authorities to request public opinion before adopting new environmental legislation.

In the EU, there are institutionalized consultations involving specific representative and advisory bodies, and public consultations open to all. Public consultations are held even where institutional hearings are held. Increasingly, in their public consultation procedures, the EU Commission and agencies use a questionnaire that interested parties are invited to fill out, and in which decision makers are provided with specially requested information.

Accountability and oversight. Environmental authorities should be independent and be able to make decisions protected from direct political influence. However, independence does not mean a lack of accountability. Authorities with decision-making powers in relation to environmental protection and health should be held accountable for their decisions. As a rule, they are accountable to another body higher up in their hierarchical chain.

Administrative protocol. To be able to hold the authorities accountable, they must keep records and indicate the reasons for their decision. In fact, the information should allow decision makers to explain that their decisions and actions comply with applicable law, are supported by evidence and represent a reasonable policy. This requires that all information available to the Environmental Protection Agency (agency) and relevant to the problem be registered with the agency. In accordance with the US Administrative Procedures Act, the proposed rules must be based on information that is in the agency's files (“on the record”), and you cannot rely on any extraneous documents. The US Administrative Conference adopted a Recommendation on Administrative

Accounting in Informal Rulemaking. Following the efforts of the United States, the EU has adopted requirements for records in the agency's archive and public access to them. A rule requiring that all facts and evidence cited by the regulatory authority in support of the proposed measure be part of the protocol and be publicly available, except in cases where exceptions apply, deserves serious consideration.

Supervision. To ensure effective accountability, other organizations or officials may have some level of oversight of the Environmental Protection Agency. For example, the Minister responsible for the environment may have the right to appoint the head of an environmental agency and monitor its work. In the Environmental Protection Agency, officials are accountable to their superiors. Supervision carried out by a higher authority in the hierarchy must respect the law and not interfere unlawfully in the work of the agency.

Administrative appeal and judicial review. Individuals affected by a decision concerning the environment and public health may be strongly interested in reviewing and reversing the decision. Such solutions may include individual solutions or generally applicable rules. For each of these two categories, two main types of review can be distinguished; administrative appeal and judicial review.

Administrative appeal. An administrative appeal includes a complete review of the decision by the decision-making body or another body (usually a higher one). As a result, the decision may be confirmed, replaced by another decision, or annulled and sent back for further decision-making by the person making the original decision. Rights of appeal should be granted to the parties to whom the decision is addressed or who are affected by this decision; as noted above, they should also be available with respect to generally binding rules.

Judicial review. Often, after an administrative appeal, judicial review of administrative decisions plays a central role in environmental management. Judicial review implies the review and possible cancellation or annulment of decisions by an independent court and is an important mechanism for ensuring the legality of decisions and protecting the rights of interested persons.

Discretionary decision-making. When developing environmental laws and regulations, as well as when making individual decisions, the authorities must apply the law, and at the same time they may or may not have freedom of action. In some cases, there is practically no freedom of action; this is the case, for example, when the authorities have to issue an environmental permit for activities subject to certain formalities (limited or non-discretionary decision-making). In other cases, the authorities have a certain freedom of action; For example, authorities may, at their discretion, set conditions for specific activities that have an impact on the environment. This discretion allows the authorities to set rules and conditions in accordance with the specifics of a particular situation.

In the field of environmental law, sanctions can be administrative, criminal or civil. Administrative sanctions include fines and measures such as the imposition of stricter requirements or, in serious cases, the deprivation of privileges or rights, such as permits. Criminal law plays a role in ensuring compliance with environmental law, but it should be applied only to serious cases of causing real or potential great harm to society. Civil sanctions usually focus on compensation for any damage caused by nonconforming activities or injunctions prohibiting specific nonconforming activities. These three types of sanctions can complement each other. For example, in cases where administrative and civil law mechanisms are insufficient, criminal law can deter pollutants.

Law enforcement. Because sanctions are crucial, enforcement is crucial. Law enforcement includes a number of actions, from verification of information provided by regulated organizations and inspections, to administrative measures and prosecution. In modern environmental policy, effective and efficient law enforcement requires knowledge and experience, and, consequently, education and training, as well as efficiency. In a multi-level management system, the supervision of law enforcement activities helps to improve the quality of law enforcement.

In order to improve law enforcement in Europe, the EU has taken several initiatives. First, a non-binding recommendation on minimum requirements for environmental inspections was adopted. It sets criteria for planning, implementation, follow-up and reporting on environmental inspection and aims to strengthen compliance with EU environmental legislation in all member States. In addition, the Commission has established a network for the implementation and enforcement of environmental legislation, known as IMPEL. IMPEL is an association of environmental authorities of EU Member States (including candidate countries). If Member States are unable to ensure compliance with EU environmental legislation, the Commission may initiate infringement proceedings, which may result in a judicial decision.

Effective environmental policy.

Principles of policy. At the international and European level, environmental policy development is guided by a set of comprehensive principles. These principles are intended to give a general direction to policy, but not all principles apply to all policies. Key principles of environmental law and policy include sustainability, the principle of prevention, the polluter pays principle, producer responsibility, the principle of integration, and the establishment of two standards.

Sustainable development. At the summit in Rio de Janeiro in 1992, the concept of “sustainable development” was officially adopted by a significant part of the world community. “Sustainable development” means economic development that meets the development and environmental needs of present and future generations. This concept is based on the idea that there is a limit to the ability of natural systems to supply energy and materials while absorbing the effects of pollution and waste. In order for development to be sustainable, the level and rate of depletion of natural resources and emissions of pollutants should not exceed the level and rate of regeneration or absorption of ecological systems. In the EU, this principle was set out in the Amsterdam Treaty of 1999 and is currently set out in article 11 of the Treaty on the Functioning of the European Union (“TFEU”), as well as in the preamble and articles 3 and 21 of the Treaty in the European Union (“TEU”). This is probably the most abstract of environmental principles, since the needs of future generations are at best only partially known. It can give a certain direction to environmental policy, but it is useless in resolving specific conflicts.

The principle of prevention. According to the principle of prevention, environmental damage should be prevented if possible. It requires that environmental policy should not be limited to eliminating or reducing pollution that already exists or is inevitable, but ensure that pollution is combated in its infancy, and that natural resources are used on the basis of sustainable profitability. In other words, the focus of environmental policy development should be on cost-effective prevention, not mitigation or compensation of environmental damage. Although this principle can be applied to both preventive regulation and retroactive liability, it is explicitly limited to regulation in the Rio Declaration.

The “polluter pays” principle. The principle of “the polluter pays” is set out in the Rio Declaration and the EU Treaty, and has been implemented in the EU through the Directive on Environmental Responsibility. This is the most concrete of the basic principles of environmental law and policy. The “polluter pays” principle, as defined by the OECD, prescribes that “the polluter must bear the costs of pollution reduction measures taken by public authorities to ensure that the environment is in an acceptable state” [3]. In the “Green Book” of 1994 “On compensation for environmental damage”, the European Commission referred to this principle as a justification for civil liability. As interpreted by the Commission, this principle requires that all environmental protection costs be “internalized”, i.e. included in the production costs of firms. Accordingly, in the absence of effective preventive measures, the “polluter pays” principle can be invoked, requiring the polluter to compensate for environmental damage caused by its activity [4]. Applying this principle to a specific situation raises tricky questions related to substantive law, for example, who is the polluter, what is pollution, what the polluter should pay for and how much the polluter should pay. Once these questions are answered, the “polluter pays” principle clearly dictates how to distribute the risks of costs and responsibilities.

Manufacturer's responsibility. The principle of “manufacturer’s responsibility” is used to justify legislation on the return and processing of products. It requires the manufacturer to take into account the environmental impacts that occur throughout the product lifecycle as part of production decisions. More recent is the principle of “extended producer responsibility”, which is defined as a political approach aimed at transferring the ultimate responsibility for managing products at the stage after their consumption from the government to the manufacturer. By their nature, these principles play an important role in shaping product laws and policies, including the return and recycling of products, but they are less important for overall environmental regulation and responsibility.

The principle of integration. The principle of integration can be understood as an obligation not to consider environmental protection as an isolated policy sector, but as a goal that must be systematically taken into account in all policy development actions. According to Article 11 of the TFEU, “environmental protection requirements should be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development”. In this context, the term “environmental protection” refers to the various policy objectives set out in Article 191 of the TFEU, such as the conservation, protection and

improvement of the quality of the environment, as well as the reasonable and rational use of natural resources. Promote better integration of economic and environmental goals.

Principles of standards development. At the level of physical impact, i.e. where emissions and discharges into the environment are controlled, policy and standard setting are based on principles such as “best practices” and “at a reasonably achievable low level”. In modern environmental legislation, there is a so-called “BATNEEC principle”, which means “the best available technology that does not require excessive costs”. This principle was embodied in the draft EU Directive on Integrated Pollution Control.

Policy tools. Traditionally, the predominant regulatory instrument in the field of environmental protection and health has been direct command and administrative regulation. In some countries, excessive use of strict administrative measures could negatively affect compliance with local environmental policies. Broader sets of tools have been developed to improve environmental legislation. The trend is that governments no longer rely solely on direct command-and-control regulation, but also apply more recent additions to their set of tools [5].

Policy areas. The system of environmental law can also be analyzed on a subject basis. In the most general terms, a mature system of environmental law usually includes both vertical laws and general horizontal instruments that apply to everyone and are rather fundamental in nature.

Policy development. Governments can use various strategies and tools to solve environmental problems. They can choose one tool or deploy a combination of two or more tools. Since environmental issues may differ in several critical aspects, there is no single right strategy or tool. The best strategy and set of tools are usually highly dependent on the problem and context. However, certain combinations of tools can be complementary or counterproductive.

A number of principles have been identified that will help policy makers develop successful environmental policies. These principles for achieving an effective and efficient environmental policy include:

- the desirability of preferring a combination of additional tools over single-tool approaches, while avoiding the dangers of a "smorgasbord" (i.e. the erroneous assumption that all tools should be used, rather than the minimum amount needed to achieve the desired result);
- advantages of economy: why should less interventionist measures be preferred and how to achieve such results;
- the advantages of escalating the response up the pyramid of tools (using not only government, but also business and third parties) to create a regulatory response, increase the reliability of results through the sequence of tools and provide early warning of tool failure through the use of triggers;
- enabling third parties (both commercial and non-commercial) to act as surrogate regulatory bodies, thereby achieving not only better environmental results with lower costs, but also freeing up scarce regulatory resources that can be redistributed in circumstances where there are no alternatives to direct government intervention.;
- maximizing opportunities for mutually beneficial results by expanding the boundaries in which such opportunities are available and encouraging businesses to “go beyond compliance” with existing legal requirements.

Many countries, including the US and the EU, have adopted “better” or “smart” regulation programs, including environmental and health regulation. These programs are generally aimed at improving the quality, consistency, consistency, efficiency and effectiveness of environmental and health regulation. The EU Initiative for Better Regulation, for example, was aimed at ensuring that European laws and regulations were targeted, correctly applied at the right level and meet the needs. The EU's more recent smart regulation focuses on the cornerstones of developing a robust management system.

Failures and successes of environmental policy. To illustrate how the models, principles and recommendations discussed above can be used, this part presents some examples of jurisdictions that could successfully solve specific environmental problems. These examples apply to both developed and developing countries.

Based on the examples discussed below, we are trying to draw more specific lessons related to effective environmental management.

The European Union. The European Union has faced problems related to compliance with EU environmental legislation by the authorities of the member States. EU environmental legislation is not enforced by the EU, but exclusively by the bodies of the Member States, which are not directly

accountable to the European Commission or the Council. To address these enforcement issues, the EU has adopted a number of policy measures, the most important of which are the following. Firstly, according to the European Treaty, the European Commission has the right to initiate legal actions against Member States that fail to properly apply and enforce EU legislation; if it is found that a member State violates its obligations, the European Court has the right to impose fines. Secondly, the Member State itself may be held civilly liable under EU law for any damage that may arise as a result of non-compliance with individual rights granted by EU law (also known as “Frankovich” liability). Thirdly, the EU has adopted minimum requirements for environmental inspections, which are a key tool for ensuring compliance with environmental requirements. Fourth, the EU has adopted rules on transparency, consultation and access to justice in environmental matters, which grant certain rights to private parties in certain environmental procedures, such as permitting procedures. By invoking these rights in national procedures, individuals and environmental groups can participate in environmental decision-making and challenge decisions that they consider illegal.

The EU has also adopted the principle of subsidiarity to delineate jurisdiction between the EU and Member States. This principle of subsidiarity is designed to ensure that decisions are made at the appropriate level of government and close to the affected citizens. In accordance with the principle of subsidiarity, the EU does not take action on environmental issues, except in cases where EU actions are more effective than actions at the national, regional or local levels. In addition, EU environmental regulation is subject to the principle of proportionality, which requires that any actions of the Union do not go beyond what is necessary to achieve the objectives of the treaties. Before proposing environmental regulation, a risk assessment is carried out and policy options are analyzed.

USA. An example of a successful environmental policy in the United States is the Toxic Emissions Registry (TRI), which is maintained by the Environmental Protection Agency (EPA). As part of this program, companies must submit annual reports to the Environmental Protection Agency on toxic chemicals that pose a danger to human health and the environment. The data provided by the companies is available to the general public. TRI has become a benchmark for tracking corporate environmental activities, which has led to a reduction in the output of companies. In this case, the disclosure of information was sufficient to significantly improve the environmental performance of the company.

In addition, in the USA, the Law on Administrative Procedures has done a lot to improve the quality of rulemaking, regulating the process and granting rights to interested parties. These rights include the right to “notify and comment”: the proposed rules should be published and the public should be given the opportunity to submit comments. The agency that proposed the rules should respond to the comments received and make appropriate adjustments to the rules. In addition, if a person believes that the adopted rules do not comply with the law, judicial review is possible by right.

India. In the 1990s, when India’s economy was experiencing significant growth, air pollution became a serious problem for the environment and health in large cities. Studies have confirmed that urban air pollution has been (and remains) the cause of premature death, various types of respiratory diseases and the associated economic costs of billions of dollars. In response, the Government of India has adopted a number of city-specific policies aimed at more efficient and stricter enforcement of regulations, improved technology and cleaner fuels. The implementation of these measures was facilitated by a significant level of participation of Indian civil society and a strong judicial system. Following the adoption of these measures, in the period from 1993 to 2002, the concentration levels of inhaled suspended particles in the environment decreased in all major cities. The success of these policies has been linked to transparency, public participation and effective oversight by the judicial system. It is estimated that the reduction in the level resulted in about 13,000 fewer premature deaths and fewer cases of respiratory diseases [6].

Another important environmental and health issue in India is the disposal of hazardous waste. Due to the increase in the production and import of waste from other countries, the volume of hazardous waste has increased significantly. Improper disposal of these wastes, including illegal landfill, has created (and continues to create) serious health risks for the population of India. The problem of illegal landfills is not being solved effectively. Experts believe that the problem can be effectively solved by creating unified hazardous waste management facilities throughout the country.

In 2006, the Ministry of Environment and Forestry of India released its National Environmental Policy, which laid the legal framework for reviewing institutional capacity to enforce environmental policy at both the central and state levels. After this assessment in 2008 India has

adopted a National Action Plan on Climate Change. One of the main objectives of the plan is to ensure the expansion of knowledge and capacity to improve the effectiveness of policy implementation measures. An example of the application of the new policy is the cooperation between the Government of India and the World Bank on building human and technical capacity to more effectively address the problem of industrial pollution.

South Korea. In 2002, South Korea ranked 135th out of 142 countries in the 2002 Environmental Performance Index (EPI) developed by the Yale Center for Environmental Law and Policy and the Center for the International Earth Sciences Information Network of the Earth Institute. One of the main shortcomings concerned South Korea's ineffective policy on air pollution. South Korea, in order to develop a sound policy to improve air quality, consulted with a diverse group of stakeholders, including various government officials, experts, non-governmental organizations and industry representatives [7]. As a result, the policy measures taken were aimed at significantly reducing particulate matter up to 10 micrometers in size and nitrogen oxides.

Brazil. With approximately 12 % of the world's freshwater reserves and 15-20 % of the world's living biodiversity, Brazil's environmental policy measures can have a global impact. In the 1980 s, Brazil adopted a National Environmental Policy and added a chapter on environmental protection to its 1988 Constitution. Theoretically, this legislative framework provides a comprehensive systematic approach to environmental protection. However, until today, many of its policies, such as decentralized regulation of environmental policy at the state and municipal level, have not been properly implemented by specific laws. The absence of an implementing law that would detail the powers of each level of government has created significant difficulties in coordinating actions between various State bodies. In the absence of clear rules, the Brazilian judicial system has played a key role in resolving conflicts related to the distribution of powers. One of the distinctive aspects of the judicial system is the role of State lawyers.

Mexico. In 1992, the UN recognized Mexico City as the most polluted city in the world. Since then, the air quality in Mexico City has improved dramatically. This was achieved through comprehensive environmental management measures, such as the ProAire program. This program presented a total of 89 policy and technological measures specifically designed to improve local air quality. Studies show that between 1997 and 2005, the introduction of ProAire helped prevent more than 1,900 deaths as a result of reduced ozone concentrations. Although air quality has improved significantly, it still poses a serious risk to the health of the Mexican population and causes respiratory diseases and a significant number of premature deaths. Mexico intends to take additional measures and strengthen law enforcement at all levels of government. In particular, a clear distribution of law enforcement powers and accountability of law enforcement officers was recognized as important.

Vietnam. In 1991, as part of the 10-year National Plan for the Environment and Sustainable Development, Vietnam adopted a number of general policy measures aimed at strengthening environmental institutions. Instead of basing its policy on existing models, Vietnam preferred gradual evolution by developing its own system of environmental regulation. This approach lacked clear and specific policy objectives and failed to develop effective measures to combat environmental pollution. In addition, Vietnam's environmental governance system suffered from an inefficient power distribution system. Conflicting lines of authority affecting both vertical and horizontal aspects of governance represented a significant obstacle to the successful adoption and implementation of environmental policy measures. The authority to regulate water use, for example, was divided among nine different agencies. A particular problem associated with vertical governance in Vietnam was the overly broad discretionary powers of local authorities to adapt environmental legislation to local conditions. Theoretically, such a flexible approach can be useful in implementing policies at the local level, provided that local authorities make the right decisions.

Eastern Europe, the Caucasus and Central Asia. The current environmental achievements of countries illustrate the cost of inaction in response to environmental challenges. The legacy of Soviet domination, marked by large-scale industrial pollution and the lack of effective environmental management (although not necessarily the absence of strict legislation), is still felt in these countries. It is estimated that the damage to human health from particulate matter amounts to more than 2 % of the gross national income of some countries. In addition, hazardous waste is considered a serious problem, including waste from mining, oil extraction and refining.

Some general lessons learned. These examples show that a successful environmental protection program requires proper design, good implementation, and reliable enforcement.



Shortcomings in any of these areas can make the policy ineffective [8]. Based on the above examples, a few general observations can be made.

1. Non-compliance with policy measures is a critical factor in some of the policy failures discussed above. The level of compliance with environmental legislation is often directly related to the level of enforcement and regulatory knowledge or understanding of the target sector. Regulatory failures, for example, in the form of overly complex policies, can undermine public confidence and threaten to reduce the effectiveness of future policies. In addition, the complexity of regulation often disproportionately increases compliance costs, especially for SME, which have to devote a relatively larger amount of their resources to enforcement than larger companies. Therefore, it is very important that policy makers seek dialogue with target sectors to ensure simplicity and operability, as well as to provide effective incentives to ensure high and voluntary compliance.

2. Local institutions play an important role in the effective implementation of environmental policy. Strong and well-funded local institutions can have a significant impact on overall compliance with environmental legislation and can help ensure support for the measure among the local population. In addition, the participation of the latter in the implementation of regulations at the local level can lead to more informed decisions and promote social learning. However, decision-making at the local level should be avoided if issues can be more effectively addressed in a broader, i.e. national scale [9].

### **Discussion**

Recommendations for Kazakhstan. In Kazakhstan, many legislative acts are poorly drafted and characterized by excessive generality and vagueness. Broad and ambitious rules provide flexibility in implementation to meet diverse local conditions in a rapidly changing environment, and create ample opportunities for administrative management in interpretation. It was found that environmental legislation in Kazakhstan encourages, but does not require action, and even where specific responsibilities are established, only a small guide on procedures and specific goals is given. In addition, the environmental legislation of Kazakhstan is insufficiently feasible and can potentially lead to duplication of powers [10].

Politics, in particular, conflicts between the Ministry of Ecology, Geology and Natural Resources of Kazakhstan and non-environmental ministries and local authorities, which are more concerned about economic growth, industrial development and increased tax revenues than environmental quality, also contribute to Kazakhstan's weak environmental legislation. In addition, law enforcement is usually ineffective. Courts in Kazakhstan are vulnerable to political interference, in particular, from local authorities, which forces them to side with local authorities. Courts are reluctant to accept lawsuits brought against the government by ordinary citizens; when faced with complex or sensitive cases, courts may even close their doors, refusing to accept certain categories of cases at all. Victims of pollution face serious obstacles to filing lawsuits in the courts. The cases that are initiated are often directed against helpless individuals or small businesses, rather than against large polluters. As a result, courts play only a minor role in environmental management in Kazakhstan.

Recent reforms that have given citizens the right to participate in environmental decision-making are partially ineffective.

This is due to the ambivalent attitude of decision makers in the Government towards non-governmental organizations (NGO), which are seen as possible supporters of the common good, but also as possible opponents of existing administrative practices that do not sufficiently take into account the needs of people. Thus, Kazakhstan's environmental tragedy is the result of systematic governance inefficiency, including legislative ambiguity, judicial apathy and regulatory inefficiency, which is further exacerbated by additional factors such as distorted incentives of local officials and a general lack of public participation. The current political configuration of Kazakhstan and how it distributes power in society play an important role in shaping its ecological landscape. While improving environmental governance can help solve some problems, it cannot provide the necessary restructuring of the system through comprehensive reforms. Broader political reforms have recently been initiated, including a greater emphasis on the rule of law, but it is too early to say what effect they will have.

Based on the analysis of international models and best practices of environmental management and specific problems that hinder effective management in Kazakhstan, some recommendations for further reforms can be made. Firstly, it is necessary to increase transparency in the field of environmental policy and decision-making. Citizens should be informed about the start of

environmental procedures and they should be given access to information and documents, taking into account reasonable exceptions applied in other jurisdictions, such as the EU and the USA. On the basis of accurate and useful information, citizens, including associations of citizens, can decide whether they want to participate in a particular procedure.

In this regard, it is necessary to increase the effectiveness of citizens' rights to participate. Effective participation requires the Government to get rid of ambiguity about public participation and fully support it. As international models and best practices have shown, public participation makes sense if the process is managed properly. This should not lead to the rejection of policies and projects that meet the public interest; Rather, it should be used to ensure that policies and projects are in the public interest and do not unduly adversely affect private interests.

### **Conclusion**

In Kazakhstan, environmental pollution in some areas reaches dangerous levels. Courts and regulatory authorities do not properly perform their duties. Although Kazakhstan's current state system, which historically prioritized economic growth over environmental quality and citizens' rights, has been at the root of environmental problems, the government has begun to show more enthusiasm for environmental protection and health. In response to the growing pressure caused by environmental degradation, the Kazakh Government has adopted a number of policies and reforms to address environmental and health issues, but the positive effect of these efforts is modest. Ordinary citizens still have limited rights to participate effectively in environmental decision-making, and industry does not always face effective barriers to expansion at the expense of the environment. Kazakhstan will benefit from a better environmental and health management system.

This article, based on international (in particular, the EU and the USA) principles, models and best practices, made a number of recommendations for proper environmental management. These recommendations are intended to contribute to the creation of rational and effective environmental policy and management.

The relevant principles, models and practices relate to the development, organization and implementation of an environmental governance system and work best if they are supported by a “political body” and are part of an integrated system. As the OECD has pointed out, regulatory policy and governance can be seen as “government as a whole integrated into the policy cycle of regulatory design, enforcement, review and evaluation, supported by relevant institutions”. If Kazakhstan can create such an integrated system, it will be able to combat environmental pollution and strengthen the health of the population. The key point of such a system is that a good environmental policy is crucial to prevent disease and maintain health. Good environmental and public health policies, in turn, require a good environmental management system. This is true both at the design level and at the implementation level. Thus, principles are needed for the development and implementation of an environmental management system.

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### Қоршаған ортаны басқару жүйелері: халықаралық үлгілер, тәжірибе және Қазақстанда қолдану

Қазақстанда үкімет қоршаған ортаны және денсаулық сақтауды басқару жүйесін оны жақсарту мүмкіндіктерін анықтау үшін, қайта қарастырып отыр. Қазақстан қоршаған ортаға шығарындылардың жоғары деңгейінен және осыған байланысты халықтың денсаулығына туындаған мәселелерден зардап шегеді. Қоршаған ортаның ластануы мен халықтың денсаулығы арасындағы байланыс бұрыннан қалыптасқан. Қазақстанда ауаның ластануы, судың ластануы және топырақ пен жер асты суларының ластануы өкпе аурулары мен қатерлі ісіктің кейбір түрлерін қоса алғанда, бірақ олармен шектелмей, денсаулық пен аурулардың кең таралған мәселелердің негізгі себептері болып табылады. Осы мәселелерді мойындай отырып, Қазақстан Үкіметі қоршаған ортаны қорғау мен экологиялық басқару жүйесін нығайтуға тырысады.

Зерттеудің мақсаты - Қазақстандағы қолдану арқылы қоршаған ортаны және азаматтардың денсаулығын құқықтық қорғауды басқару жүйесін қолданудың халықаралық үлгілерін, тәжірибелерін талдау. Мақалада қоршаған ортаны басқарудың бірқатар принциптері мен әдістері талқыланады және зерттеледі. Бұл қағидаттар мен тәжірибелер ұтымды және тиімді экологиялық саясат пен менеджменттің қалыптасуына ықпал ететіндіктен,

Қазақстандағы қазіргі жүйені қайта қарау кезінде оларды ескеру ұсынылады. Мақалада қоршаған ортаны құқықтық қорғаудың және азаматтардың денсаулығына келтірілген зиянға ден қоюдың үлгілері мен әдістері талданады, бұл құралдар біріктірілген жүйенің бөлігі бола алады.

Зерттеудің негізінде қоршаған ортаны басқарудың өз әлеуетіне жетуі үшін Қазақстанда да саяси реформалар жүргізіп, саясат пен қорғау тетіктерін қалыптастыруға қарапайым азаматтарды тарту қажет екені анықталды. Қоршаған ортаны қорғау бойынша басқарушылық шешімдерді қабылдау кезінде адамдардың пікірлерін жинақтау және есепке алудың зерттелген стратегиялары қазақстандық қоғамда қолданылуы мүмкін.

Түйінді сөздер: қоршаған ортаны қорғау және халықтың денсаулығы; халықаралық үлгілер мен тәжірибелер; қоршаған ортаны басқару және заңнама; сот өзгерістері; азаматтық қоғамның қатысуы; реформалар.

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### **Системы управления защитой окружающей среды: международные модели, опыт и применение в Казахстане**

В Казахстане правительство пересматривает свою систему управления окружающей средой и здравоохранением, чтобы определить возможности её улучшения. Казахстан страдает от высокого уровня выбросов в окружающую среду и связанных с этим проблем со здоровьем населения. Связь между загрязнением окружающей среды и здоровьем населения установлена давно. В Казахстане загрязнение воздуха, загрязнение воды и загрязнение почвы и грунтовых вод являются основными причинами широко распространенных проблем со здоровьем и болезней, включая, помимо прочего, легочные заболевания и некоторые виды рака. Признавая эти проблемы, казахстанское правительство пытается укрепить охрану окружающей среды и систему экологического управления.

Целью проведенного исследования являлось проведение анализа международных моделей, практик, применения систем управления правовой защитой окружающей среды и здоровья граждан с применением в Казахстане. В статье обсуждается и исследуется ряд принципов и методов экологического управления. Поскольку эти принципы и практика способствуют установлению рациональной и эффективной экологической политики и управления, предложено учитывать их при переосмыслении нынешней системы в Казахстане. В статье проведен анализ моделей и методов правовой защиты окружающей среды и реагирования на урон, наносимый здоровью граждан, данные инструменты могут являться частью интегрированной системы.

На основе проведенного исследования установлено, что для того, чтобы экологическое управление могло полностью реализовать свой потенциал, Казахстану также необходимо провести политические реформы и привлекать для формирования политики и механизмов защиты рядовых граждан. Исследованные стратегии по сбору и учету мнения людей при принятии управленческих решений по защите окружающей среды могут использоваться в казахстанском обществе.

Ключевые слова: охрана окружающей среды и здоровья населения; международные модели и практики; экологическое управление и законодательство; судебные изменения; участие гражданского общества; реформы.

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