


## THE CREATION OF ENVIRONMENTAL SAFETY INDUSTRIAL REGIONS BASED ON THE PRINCIPLES OF THE ECONOMIC MECHANISM

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**Abstract.** At present, the sharp deterioration of the environment, the depletion of natural resources, and the pollution of air, water, soil and forests have become global. In industrial regions, the environment with high environmental parameters requires advanced production technologies, rational use of natural resources, and increasing the environmental friendliness of the entire economy. In this regard, methodological issues of environmental management have been developed and scientific and practical recommendations and their improvement have been proposed on this basis. As you know, in the conditions of economic reform, it is impossible to solve socio-economic problems without serious consideration of environmental factors. In this paper, based on the principles of the economic mechanism, a model of environmental safety of industrial regions is constructed.

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**Keywords:** economic mechanism, nature management, natural resources, model of environmental safety, environmental quality, pollution, atmospheric air, water, soil, forest.

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*Received: 11 January 2020; Accepted: 15 July 2020; Published: 30 August 2020.*

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## 1 Introduction

The economic mechanism of nature management is an integrated system of managing the national economy (Aidosov & Aidosov, 2000; Aidosov et al., 2007, 2015; Nigmatulin, 1970; Blinova, 1956; Zaurbekov et al., 2018; Aidosov et al., 2016, 2019, 2017, 2015, 2016). It is based on:

- principles of the unity of ecology and economics, by which is understood the ensuring sustainable and dynamic economic development in order to improve the living standards of the people while improving the quality of the environment;
- effective combination of centralized and local conditions. This means that state and local governments are responsible for organizing the effective system of nature conservation, rational and integrated use of natural resources and the state of the environmental situation on its territory in:
  - transition from sectoral to predominant territorial management of nature conservation;
  - determining the strategic directions of the environmental protection;
  - development of the unified methodology for determining and solving the environment protection problems;

- solving state level problems within satisfying international obligations on the protection of nature.

The effectiveness of the development of mineral resources largely depends on the effectiveness of the economic management mechanism used in the activities of enterprises, regardless of ownership. In the transition to market relations, this is of fundamental importance, since in order to increase production efficiency it is necessary to take a whole range of measures of the organizational, economic mechanism of managing the use of material resources and the greening of mining.

## 2 Main Part

Modeling the ecological and economic mechanism for the development of mineral resources includes economic conditions that ensure the realization of opportunities, the emergence of interest and increased responsibility for the rational use of mineral resources (Fig. 1).

In our opinion, the economic mechanism for the development of resources must be considered in two interrelated and interdependent elements. The first group includes elements that have a direct impact on the development of mineral resources. These include: a system of organizational and technical development, marketing support in the use of resources and the mechanism of business contracts, a system of economic incentives and, finally, a system for the formation and use of environmental protection funds.

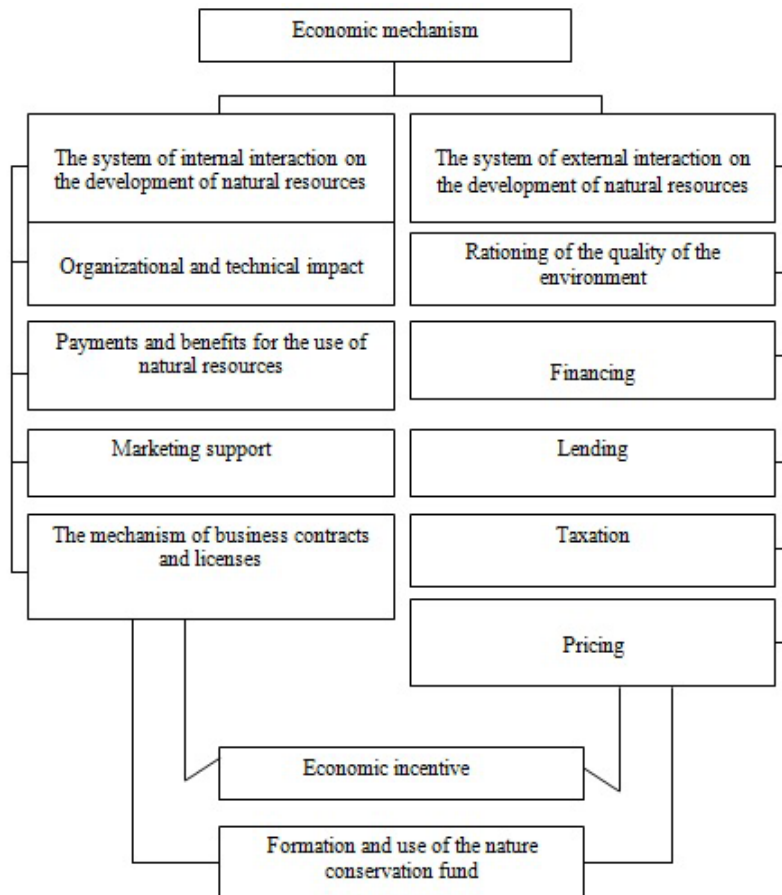


Figure 1: Economic mechanism of nature management

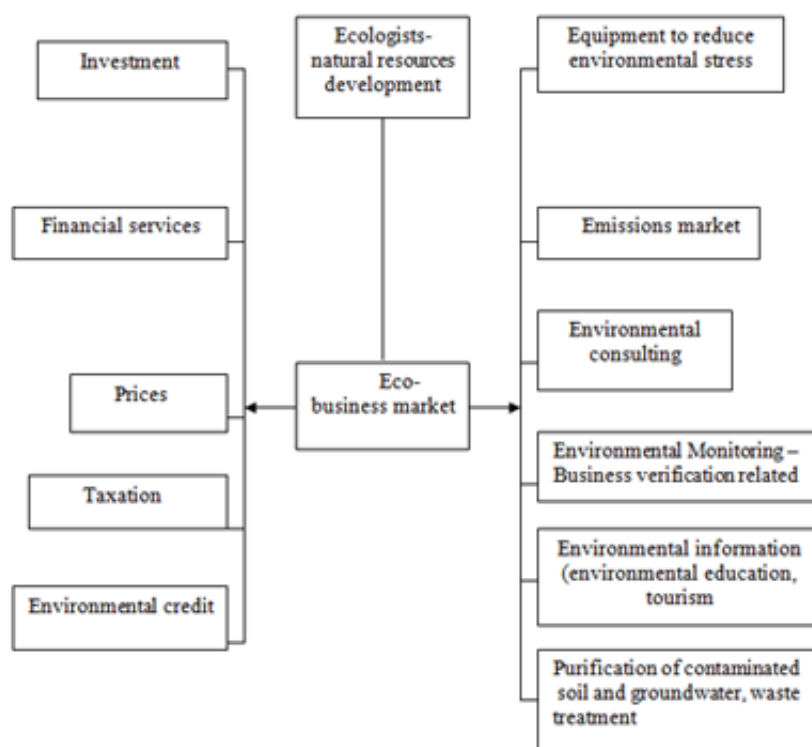
The most important element of the economic management mechanism in the development of mineral resources is the system of organizational and technical development. Having established

the demand for products, each enterprise, regardless of ownership and management, should work to improve the quality of the product, make it competitive in the market, and the improvement of environmental legislation will, in addition, contribute to more efficient use of material resources, technical improvement of existing production facilities and the development of fundamentally new environmentally friendly, low-waste and non-waste technologies for the integrated use of raw materials

Since the creation of an effective mechanism of marketing activity consists, first of all, in replacing the prescriptive methods of planning and regulation, the organization of marketing activities in the development of MR will practically not differ from activities in other sectors of the national economy.

The basic principle of marketing is a two-pronged, complementary approach to the market. On the one hand, this is a thorough and comprehensive study (needs and demands) of consumer needs for products and services. On the other hand, as a rule, an active impact on the market and existing demand, on the formation of needs and consumer preferences.

One of the necessary elements of the economic mechanism regarding environmental management between the relevant territorial executive body and business entities. They provide for the conditions and procedure for the development of resources, the rights and obligations of the user, the size of payments for the use of natural resources, as well as the responsibility of the parties, compensation for harm and the procedure for resolving demand.



**Figure 2:** Models of environmental safety in the development of natural resources

The main elements of the external impact group of the economic mechanism of material resources include: financing, lending, taxation, pricing, economic incentives, the formation and use of a nature conservation fund.

Analysis of the existing economic mechanism of managing shows that it is still largely inadequate to the current state of production development. On the one hand, it does not fully contribute to improving the environmental and economic efficiency of developing MR. On the other hand, it does not meet the interests of enterprises in the conditions of market relations.

In this regard, the fundamental principle should be the greening of all activities related to

the development of mineral resources, as well as a comprehensive consideration of the natural features of the functioning of mining in a particular region. (Fig. 2)

And only after this, measures should be taken to introduce ecotechnics, eco-services and the eco-industry. But for this it is necessary to create an appropriate system of market regulators (incentives, loans, investment incentives, etc.) to change priorities in the allocation of resources, investments in the development of mineral resources.

Studies show that in recent years, Kazakhstan has practically no the latest technologies for waste processing. In the context of the transition to market relations, the existing financing system was destroyed, in connection with which most enterprises are in a difficult financial situation and can not make contributions to environmental protection funds.

Under these conditions, one of the ways to solve environmental problems is to attract foreign investment in sales. The costs associated with the elimination of damage to the environment are, in most cases, reimbursed not by polluters, but are transferred through the state. In this regard, it would be advisable to create a financial and credit system in the region in the form of an environmental bank. In our opinion, this method of financing and lending to environmental protection measures will correspond to market conditions and promote rational nature management. For example, the created environmental insurance system is one of the ways to protect enterprises and organizations from damage caused by sudden, deliberate or unexpected pollution of the environment.

To create optimal environmental conditions for the development of mineral resources, a comprehensive study of natural resources is necessary. To formulate the basic requirements for the creation of environmental and economic monitoring: providing the necessary information, quantitative and qualitative characteristics of the environment; analysis of various types of activities of people affecting the environment; analysis of environmental changes caused by these activities; the impact of environmental changes on people's livelihoods; analysis of the effectiveness of measures to preserve and improve the environment; comparative analysis of indicators of environmental statistics for certain regions.

Ecological and economic monitoring will provide the necessary information base for the development of appropriate models for optimal management of the use of natural resources and environmental protection.

In the context of the transition to market relations, the environmental market began to form and develop. It unites enterprises and organizations of an environmental profile: on processing industrial, household and agricultural waste; the production of organic food; protecting the air and water basin, soil and increasing its fertility, restoring the number of rare species of animals and plants. Such enterprises can be public, private, mixed, as well as with the attraction of foreign capital.

The formation of the market for environmental engineering and environmental services in the region is a long process based on the competition of environmental producers and their creative desire to improve the use of existing material resources. The quantity and volume of the market for environmental technology, goods and services will be determined by supply and demand.

The development of the market for environmental and environmental services is facilitated by the development of the information market, without which the formation of a modern market is impossible. For example, environmental information provides knowledge about the state of water, air, fauna and flora, land in natural areas and about activities or factors that have an adverse effect.

The environmental information market should also be developed at the international level, since a unified system of eco-information will allow an efficient and adequate assessment of the situation.

The main elements of the new economic mechanism of nature management are payments for the use of natural resources, limits on their removal, emissions of harmful contaminated substances and waste disposal; tax credit and other benefits provided to enterprises, organizations,

institutions and citizens to carry out effective measures for the protection of nature. Of great importance are the planning and financing of environmental measures. Payments for the use of natural resources are the main source of financial resources to ensure the protection, rational use and reproduction of natural resources.

Planning of measures for environmental protection and nature management should be carried out on the basis of a single state economic program taking into account the natural resource potential of the country's regions. As for the financing of environmental programs and measures for nature conservation, it is carried out both from the budgets: republican, regional, and at the expense of enterprises, institutions and organizations, as well as from the republican and local environmental funds, environmental insurance funds, bank loans, voluntary contributions of the population, foreign legal entities and individuals and other sources of financing and is allocated as a separate line in the republican and other budgets, is provided by material and technical resources.

The economic mechanism of nature management also includes the obligation of state environmental authorities, statistical services and nature users to conduct qualitative and quantitative accounting of natural resources and secondary raw materials, conduct their environmental and economic assessment, and environmental authorities must maintain state land, water and forest cadastres, as well as subsoil inventories, the living world and specially protected natural territories. It should be borne in mind that payments for land, subsoil, forest, vegetation and wildlife, recreational and other natural resources are charged both for the right to use natural resources within the established limits, and for their over-limit consumption. The funds received are spent on reproduction and nature conservation.

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A permit (license) for the integrated use of natural resources is allocated by state environmental authorities, which indicate their type, volume, and environmental requirements. The deadline for achieving the normative volumes of nature management is set by year and in accordance with indicators of state and regional environmental programs. In order to solve urgent environmental problems, restore the quality of the environment, and compensate for harm, a system of environmental funds should function. It should be formed from funds from enterprises, institutions, citizens, foreign legal entities and citizens. Including due to the payment for emissions of pollutants into the environment, waste disposal and other pollution, as well as from the amounts received from claims and compensation for harm and fines, funds from the sale of confiscated protection and fishing tools illegally obtained with their help wild animals and funds received in the form of dividends, interest on deposits, bank deposits, from the shared use of the

fund's own funds in the activities of enterprises and other legal entities, and citizens.

The economic mechanism of nature management is reduced not only to payment (collection of payments), but also to encourage nature users and environmental "polluters" for active conservation of nature. Such incentives are provided through the establishment of various benefits to enterprises, institutions and organizations, including environmental ones, for the introduction of, for example, low-waste and non-waste technologies, for the active use of new harmless forms of energy, secondary resources, and other activities that provide an environmental effect. This also includes exemption from taxation of environmental funds, transfer of part of their funds on a contractual basis for interest-bearing loans to enterprises and citizens for measures to reduce emissions of pollutants, the establishment of higher depreciation rates of environmental production funds, as well as the application of promotional prices and allowances for environmentally friendly products and the introduction of special taxes for the production of environmentally harmful products or products manufactured using environmentally hazardous technologies. It is envisaged for the same purpose to apply preferential lending to enterprises regardless of their form of ownership, which effectively protect the environment. Other types of economic incentives for nature conservation can be established based on local conditions and the current environmental situation.

As you know, an important component of the economic mechanism of environmental management is the payment for the right to use subsoil, land, flora and fauna, and other natural resources. Therefore, the government, on the basis of the Law "On Subsoil", has introduced temporary minimum payment rates for the right to extract (use) mineral resources. Such payments are now made by all enterprises and organizations. There is also a stricter responsibility for a wasteful attitude to the bowels. If the company will allow for excess normative losses in mining operations, payment rates will double. It is also allowed to differentiate payment rates for subsurface resources taking into account natural, geographical and other conditions within 30% of the approved rates. In order to interest enterprises in the integrated exploitation of subsurface resources, payments are not levied on incidentally recovered substances in the extraction of oil, gas and some other minerals, including overburden. The same benefit is also presented for the use of some advanced technologies, for example, in the extraction of oil by thermal, physicochemical and microbiological methods.

By a decree of the President of the Republic of Kazakhstan, having the force of the law "On taxes and other obligatory payments to the budget", the payment for land for both agricultural and non-agricultural purposes is determined. The basis of the land payment is a document certifying the plots. Land tax and rent for land are included in the revenue and expenditures of budgets. This provision is aimed at encouraging land users to use land in a careful and scientifically sound manner.

There are several types of boards on the ground, including land tax, regulatory land price and rent. Based on this, farmers, land owners and land users, with the exception of tenants, are taxed annually. For land leased, rent is set. Moreover, the amount of land tax does not depend on the results of economic activity. It is set in the form of stable payments per unit of land area. Land tax is established taking into account the composition of the land, its quality and location.

One of the components of the organization of environmental management and environmental protection is the standardization of the quality of the natural environment. It allows you to set the maximum permissible standards for environmental impact, helps to preserve the genetic fund of flora and fauna, ensures environmental safety of people, protection, reproduction and economical use of natural resources, while maintaining the sustainable development of the national economy.

Moreover, environmental funds should be spent only on improving the population, measures and programs to protect the environment, reproduction of natural resources and scientific research, as well as the introduction of environmentally friendly technologies, the construction

of treatment facilities, the payment of compensation to citizens for compensation for damage caused to health by pollution or other impact on the environment, the development of environmental education and training. Accordingly, the spending of environmental funds for purposes not related to environmental protection should be prohibited. In case of environmental and natural disasters, accidents and disasters, voluntary and mandatory state environmental insurance is introduced for enterprises, institutions, organizations, as well as citizens, their property and income. The procedure for environmental insurance and the use of these funds is determined by the government. Along with insurance, a large place is given to public funds voluntary contributions and donations from public associations, other sources and are spent only on environmental protection.

For this purpose, the state bodies of nature protection, sanitary and epidemiological surveillance approve the standards for maximum permissible concentration (CCC) of harmful substances for certain regions, as well as harmful biological substances (microorganisms) that pollute the environment (water, air, land). With their help, the state of the environment for human, animal and plant health is assessed. For some of the most valuable natural territories (reserves, nature parks, resorts, etc.), stricter standards are established. If they are violated, the release or discharge of harmful substances by a special order of the environmental protection authorities and sanitary and epidemiological surveillance may be suspended, limited or stopped completely. In addition to the MPC, the regulation of environmental quality provides for MPE and MPD (maximum permissible emissions and discharges) standards for harmful or biologically harmful substances in the environment.

These standards are established not abstractly, but taking into account the production capacities of enterprises (facilities), data on the consequences of each pollution source in accordance with the applicable MPC standards for harmful substances in the environment.

MPC and PDS are also approved by nature authorities on chemicals and sanitary and epidemiological surveillance bodies on microorganisms and other biological substances. Other standards are introduced, such as the permissible level of radiation exposure, the content of radiation substances not only in the environment, but also in food products in quantities that are safe for public health, maximum permissible levels of noise, magnetic fields, vibrations and other harmful effects.

The normative volumes of discharges, norms for the withdrawal of natural resources, and waste disposal are established by specific environmental users by regional environmental authorities in accordance with their competence. As for the standards themselves, they are developed by enterprises - nature users taking into account the proposals of local governments, science, public organizations and the population, as well as legislative acts, environmental situations and programs in order to actively help prevent imbalance in the environment and ensure optimal conditions for people's lives.

### 3 Conclusion

In order to increase responsibility for the protection of nature, enterprises are issued a special permit for emissions, waste and natural resources. The Ministry of Ecology and Bioresources is obliged to provide methodological guidance for rationing discharges and emissions, limiting natural resources and waste management. The management of these issues on the ground should be carried out by local executive bodies together with local environmental authorities and sanitary and epidemiological surveillance. An important point in solving environmental problems is the provision of wider benefits to enterprises, organizations and individuals when they carry out environmental protection measures. In our opinion, it is advisable to consider the issue of exemption from value added tax on environmental work and services performed at the expense of environmental funds. This would serve as an additional source of solving environmental problems. It seems reasonable to exempt from value added tax and profit tax reserves, national

and dendrological parks and botanical gardens. This would significantly improve the financial situation of nature reserves. It would also be possible, when calculating the tax on corporate income, to reduce the tax base of enterprises by the amount of funds from their own sources of financing, aimed at investments that reduce emissions, discharges of harmful substances. Given the current tight financial and tax policy, enterprises would have received a substantial practical opportunity to finance environmental protection measures at their own expense.

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