




Mechanism for Settlement of Environmental Crises in the Economy

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Abstract: The current ecological crisis threatens the possibility of sustainable development of human civilization. The degradation and destruction of local ecosystems leads to the destabilization of the biosphere, the loss of its unity and the potential to support vital environmental parameters. Overcoming the ecological crisis can be carried out only through the formation of a fundamentally new, more harmonious model of interaction between nature and man. Under these conditions, a comprehensive assessment of the environmental situation and the development of a mechanism for resolving environmental crises in the economy are of great importance.

1 INTRODUCTION

The adoption of the concept of sustainable development implies the assumption by individual states and regional integrations of obligations to implement the principles of the "green" economy, which involve the harmonization of economic, social and environmental aspects of the development of society. Meanwhile, as international environmental studies show, over the past 50 years, mankind has been steadily widening the gap between the demand for environmental resources and the ability of nature to satisfy it. At the same time, developed countries leave the largest "ecological footprint", demonstrating a high level of consumption of resources and end products.


The increase in environmental tension necessitates the implementation of comprehensive measures in order to ensure the environmental safety of the individual, society and the state. In developed foreign countries, these measures are implemented through the implementation of comprehensive legal and organizational regulation of the environmental sphere, as well as toughening responsibility for environmental offenses and creating threats to the environment.


In Russia, topical environmental problems are largely ignored, as evidenced by the ineffectiveness of existing regulations, the use of outdated models of interaction between society and nature, as well as the low credibility of environmental organizations in the country. The consequences of such an irresponsible attitude to environmental issues are the gradual depletion of natural resources, a high level of pollution of territories, and the deterioration of public health. Meanwhile, ensuring rational nature management and environmental protection of territories is an integral factor in the country's sustainable development in the long term.


The ecological protection of the territory implies a normal ecological situation, that is, the state of safety of the natural environment and the vital interests of a person from the possible negative impact of economic and other activities, natural and man-made emergencies, their consequences (Article 1 of the Federal Law of January 10, 2002 No. 7-FZ "On Environmental Protection").

2 MAIN BODY

Environmental security is an integral element of the national security of the state along with its military,

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political, economic, food, information and other types of security. The system for ensuring environmental safety at the national level involves a comprehensive assessment of territories, the implementation of continuous monitoring of their ecological state, as well as the adoption of managerial decisions to improve it.

The Russian Federation, as the world's largest state in terms of territory, has a particularly significant mission to maintain the ecological balance on the planet. The scale of the country's natural, industrial and intellectual potential also implies its active participation in solving the global problems of our time. Meanwhile, the sphere of ensuring environmental protection in Russia is on the periphery of the attention of both state bodies and the population, which, combined with irrational nature management, causes a significant deterioration of the environment and entails a threat to human health.

At the present stage, Russia ranks 54th in the ranking of countries in terms of environmental pollution (NONEWS. <https://nonews.co>), yielding to almost all developed countries, as well as many Latin American countries. The country's most serious environmental problems are deteriorating water quality, air pollution, deforestation, soil degradation and loss of biodiversity. Significant concerns are also caused by the presence of radioactive contamination and excessive volumes of unprocessed municipal solid waste.

According to official sources, in 15% of the country's territory, where most of the population is concentrated, the quality of anthropogenic ecosystems is recognized as unsatisfactory. This leads to adverse consequences for public health, in particular, an increase in the number of oncological and acute respiratory diseases.

Of particular concern is the problem of air pollution: the level of air pollution in Russian cities is assessed as high, which leads to extremely adverse consequences for human health. The indicators of the emission of pollutants into the atmosphere are presented in Figure 1.

Thus, the volumes of emissions of pollutants into the atmosphere in the last 10 years have actually remained at the same level. At the same time, emissions from stationary sources decreased by 13.7% over the study period due to environmental measures and a general reduction in industrial production. Emissions from mobile sources increased by 17.4% due to a significant increase in motorization in Russia.

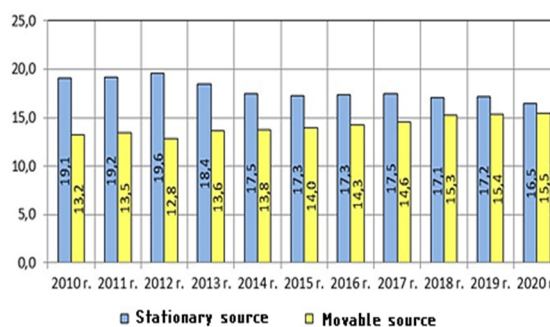
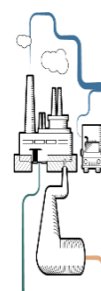


Figure 1: Emissions of pollutants into the atmosphere, million tons (Rosstat, <https://rosstat.gov.ru/>).

Serious scale is the pollution of the water basin of the Russian Federation. An important factor in water pollution is the widespread use of outdated and inefficient treatment facilities. The dynamics of the discharge of polluted wastewater in the Russian Federation is clearly shown in Fig.2

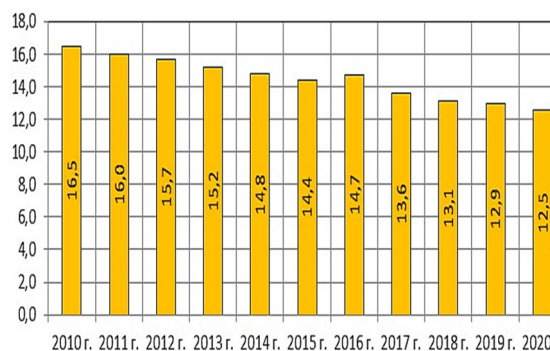


Figure 2: Emission of polluted wastewater in the Russian Federation, billion m3 (Rosstat, <https://rosstat.gov.ru/>).

Thus, the dynamics of polluted wastewater discharges in the Russian Federation tends to decrease: in the period from 2010 to 2020, their volume decreased by 4 billion cubic meters, or 32%. At the same time, today up to half of wastewater has a high level of pollution, which exceeds European standards by dozens of times and leads to a decrease in environmental safety. The result of pollution of the aquatic environment is the death of fish and the emergence of infectious diseases among the population (Dedul, 2018).

Solid waste from industrial production and household waste pose a significant hazard. So, in Moscow alone, more than 50 million tons of them are formed annually - in the future they are exported to the Moscow region and accumulate in landfills. The territory of landfills cannot be used in the future, chemicals located in landfills can get into groundwater, and the number of landfills themselves is already so large that at some point they will have to be arranged farther from Moscow and other megacities. The dynamics of production and consumption waste generation in the Russian Federation is shown in Figure 3

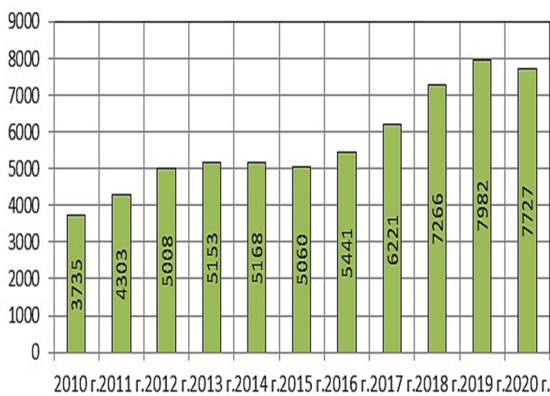
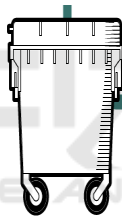


Figure 3: Generation of production and consumption waste in the Russian Federation, million tons (Rosstat, <https://rosstat.gov.ru/>).

Thus, the volume of production and consumption waste for the period from 2010 to 2020 more than

doubled. At the same time, the problem of dealing with solid waste is not solved, and only 2-3% of household waste is recycled, which is an extremely low share. In countries with a high level of environmental safety, about 60% of solid waste is currently recycled. Also in Russia there is a problem of radioactive contamination. Currently, Russia has 33 nuclear reactors operating at nuclear power plants, and the Navy includes 50 ships that use nuclear installations. Some nuclear power plants have either reached the end of their service life or are approaching this line, which increases the risk of accidents and emergencies.

Another source of radioactive contamination are enterprises that produce material for the creation of nuclear weapons. For the needs of the military sector, there are nuclear test sites, radioactive waste burial sites, specialized laboratories and research institutes that use fissile material in their work.

In recent decades, the ecological situation has become more difficult due to uncontrolled deforestation, which is observed in such regions as Karelia, the Khabarovsk Territory, the Kostroma and Arkhangelsk Regions.

In the energy sector, most of the electricity is still produced by burning fuel on inefficient and outdated equipment, which leads to harmful emissions into the atmosphere. The transition to modern equipment would reduce harmful emissions by 25%.

The operation of outdated power plants is fraught with the risk of man-made disasters, which may be of a radiation, chemical, electromagnetic or mechanical nature. One of the serious problems is the unreliable system of mining and transportation systems.

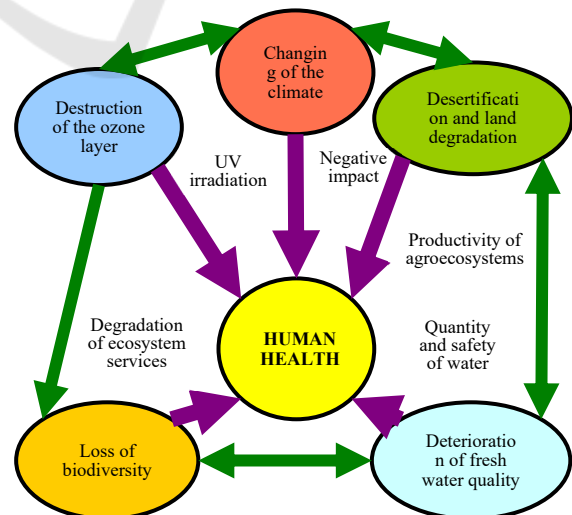


Figure 4: The impact of environmental factors on human health (Shilov, 2020).

Environmental problems affect the health of the population. Currently, doctors record an increase in diseases of the endocrine system, respiratory organs, the presence of such congenital diseases as malformations and various forms of deformities is noted.

Thus, an unfavorable environmental situation has developed in Russia, caused by such factors as outdated forms of energy production, lack of proper control over harmful emissions into the atmosphere, and irrational nature management. To solve the problems that have arisen, it is necessary to create measures to ensure environmental safety, both at the federal and regional levels. The negative impact of environmental problems on the health and quality of life of the population indicates the need to find ways for a more optimal coexistence of man with the environment (Fig. 5) (Alikaeva, 2019).



Figure 5: Coexistence of man with the environment.

The study of the actual state of the natural and anthropogenic environment allows us to conclude that there are significant threats to Russia's environmental security. The environmental crisis in the country is caused by irrational nature management, the presence of numerous hazardous industries, the lack of a separate waste collection system and an inefficient system for controlling emissions of pollutants and radioactive substances. Countering these threats is one of the most significant tasks facing the state, and its solution is based on the development and implementation of large-scale projects and measures to ensure environmental safety at the federal, regional, municipal and industry levels.

The mechanism for resolving environmental crises in the economy is based on the relationship of various structural elements of ensuring environmental security (Fig. 6) (Blumenfeld, 2018).

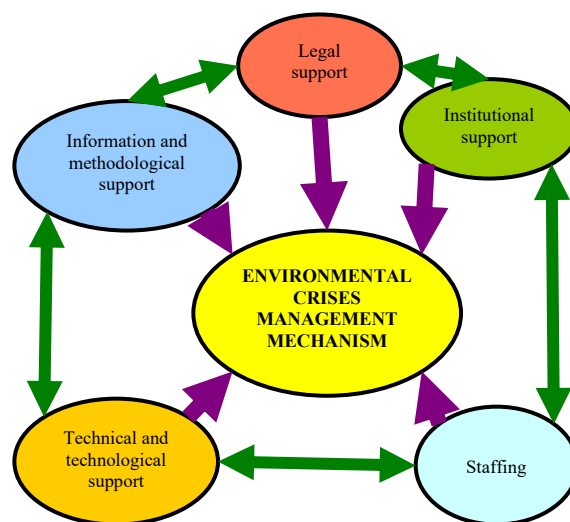


Figure 6: Elements of the system for ensuring environmental safety and resolving environmental crises in the economy.

The mechanism for the comprehensive settlement of environmental crises is associated with the transition to a "green" economy, which involves the harmonization of economic, social and environmental aspects of development. The methodological basis of the social approach to the "green" economy was laid by the concept of "sustainable development" formed in the late 1970s, according to which the satisfaction of the current needs of mankind should be carried out without prejudice to future generations. According to V.D. Kalner, the "green" economy is such a "model of sustainable development, which proceeds from the conditions of maintaining a balance between economic and social requirements and maintaining the state of the environment at a level necessary to ensure the livelihoods of living people without prejudice to the needs of future generations of earthlings in the resources of the biosphere" (Kalner, 2019).

For the first time, the United Nations Environment Program (UNEP) identified social justice as an essential feature of a green economy. In the report "Towards a Green Economy", published within the framework of this program, the "green" economy is characterized as an economic activity that is designed not only to reduce the risks of negative impact on the environment, but also to increase the welfare of the population, to ensure social justice (UNEP Report? 2011).

In practice, the following tools are used to implement these principles (Fig. 7).

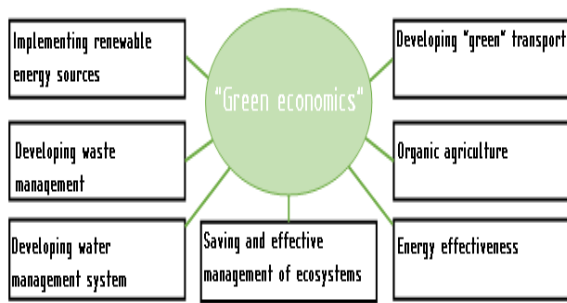


Figure 7: "Green" economy as a mechanism for resolving environmental crises.

For a gradual transition to the principles of a green economy, the state must take a number of key measures to change the approach to the organization of production and economic processes. First of all, we are talking about reducing investment in industries containing environmentally harmful technologies and increasing tax rates for these industries. This approach forces entrepreneurs to choose environmentally friendly technologies.

3 CONCLUSION

On the part of the state, increased attention should be directed to investing in and supporting "clean" energy sources, agriculture and waste processing. The transition to alternative energy sources should take place not only at the industrial level, but also at the household level. An important task is the introduction of environmentally friendly technologies in the extraction of natural resources, where resource-intensive methods are actively used.

Thus, the "green" economy is a low-carbon, resource-saving, energy-saving, cleaner and socially fair economy, focused on improving the well-being of society while reducing the burden on the ecosystem. The listed components can be called axiological, i.e. value level of the concept of "green" economy. At the same time, the ontological aspect of the studied model, which ensures its internal movement and development, acquires the greatest importance.

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