




# Interrelation of Ecology and Economy in the Modern World

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**Keywords:** Ecology, economy green economy, sustainable development.

**Abstract:** The adoption of the concept of sustainable development implies the adoption by states of obligations to implement the principles of the "green" economy, at the declarative level, involving the harmonization of economic and environmental aspects of development. In the Russian Federation, the values of rational environmental management and the developments of developed countries in the field of the "green" economy are gradually being introduced, but there is no unambiguous understanding of the relationship between economic development and environmental well-being in the country. Such incrementalism and inconsistency create certain challenges, which makes it relevant to study the relationship between ecology and the economy in the modern world and in the Russian Federation.

## 1 INTRODUCTION


Over the past centuries, mankind has been actively developing the environment, ensuring the active growth of the economy. The result of this approach was the climate crisis, pollution of the biosphere, and an increase in the incidence of the population. At the present stage of development, the relationship between the economy and the environment has become obvious and the concept of sustainable development has been developed, which implies balanced economic development and social progress, taking into account responsibility for the environment.


The term "sustainable development" was first used at the official level in the World Strategy for Nature Conservation, which was adopted in 1980 under the auspices of the UN. In this document, a comprehensive long-term environmental support program was presented, and the concept of sustainable development was formulated, which combines all the urgent economic, social and environmental tasks of mankind. The WSOP in its second edition was published in 1991 under the title


"Caring for Planet Earth - A Strategy for Sustainable Living".

The concretization of the tasks of sustainable development in the relationship between ecology and the economy was carried out in the international report "Our Common Future" of 1987. The concept of sustainable development was finally consolidated at the level of international law in 1992 in the Declaration on Environment and Development. The concept of harmonious development of the economy and ecology proposed in it was supported by all the states of the world, including Russia. In 1996, our country issued Decree of the President of the Russian Federation No. 440 dated 01.04.1996 "On the Concept of Transition of the Russian Federation to Sustainable Development", in which progressive economic development was limited to the needs of preserving and restoring natural ecosystems.

As a result of the landmark UN Conference on Sustainable Development (Rio + 20), held on June 20-22, 2012, the document "The Future We Want" was published, which predetermined the prospects for human development in the 21st century in the context of the relationship between economy and ecology. Specific sustainable development goals and targets for the period from 2015 to 2030 are reflected in the

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Resolution adopted by the UN General Assembly on September 25, 2015, "Transforming our world: the 2030 sustainable development agenda." The strategic aspects of sustainable development in the relationship between ecology and the economy in the modern world are clearly shown in Figure 1.

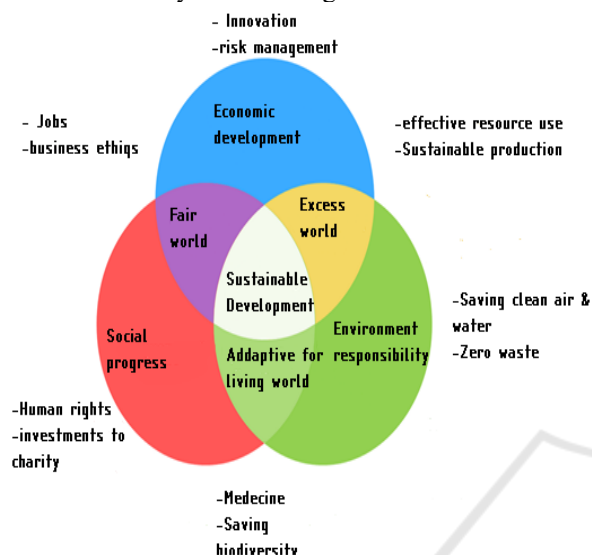


Figure 1: Structural aspects of sustainable development in the modern world.

In recent years, the category of "green" economy has been added to the general context of the sustainable development of civilization as a direction in economic science based on the recognition of the economy as a dependent structural component of the natural environment. The actual application of this concept in practice requires the adoption of comprehensive organizational, managerial, legal, technological, financial and economic measures to green the economy and reduce its pressure on the environment. The solution of this problem can be achieved primarily at the micro level by ensuring the sustainable development of individual enterprises (Kalner, 2019).

The term "green" economy was borrowed from the report of the same name by British economists in 1989, while the start of the formulation of the corresponding policy dates back 20 years later and coincides with the global crisis of 2008. It was within the framework of overcoming this crisis that the concept of a "green" economy was finalized and approved at the level of the G7 (G7) and G20 (G20) summits.

Since far from the last cause of the crisis was the exhaustion of the meanings of economic development, since individual material consumption ceased to be its engine, the global economy needed

legitimate grounds for investing in some alternative. The "green" economy was chosen for the role of such, especially since the state became the main investor in the new post-crisis reality, supporting the economy with its investments.

As international environmental studies show, over the past 50 years, humanity 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. At the same time, the level of negative anthropological burden is always parabolically dependent on progressive economic growth: at the initial stages, the acceleration of economic development entails a deterioration in the environmental situation, but after key needs are met, a public demand for a favorable environment arises, provided through environmental measures and prohibitions.

In the broad sense of the word, the "green" economy is a direction in economic science based on the recognition of the economy as a dependent structural component of the natural environment. The adoption of this paradigm requires the adoption of comprehensive organizational, managerial, legal, technological, financial and economic measures to green the economy and reduce its pressure on the environment.

It should be noted that in the scientific community there is no unified approach to interpreting the essence of the "green" economy. There are two discourses in its definition. One of the approaches emphasizes its evolutionary-technological nature as a fundamental principle, while the second approach has a social basis and appeals to the idea of justice.

The representative of the first of these approaches can be called the German economist R. Fuchs, who believed that the "green" economy "is characterized by a productive synthesis of biological evolution and technology, growth along with nature" (Fuks, 2016). Russian researcher Yashalova N.N. characterizes the "green" economy as an economic system "with low carbon emissions, which efficiently uses resources and meets the interests of the whole society" (Yashalova, 2019). Thus, within the framework of this discourse, it is implied that economic growth opposes the conservation of biodiversity, and the way out of the dilemma and the criterion for action is precisely the "green" economy.

## 2 MAIN BODY

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. In the report "Towards a Green Economy", published under the auspices of the UN Environment Programme, the term "green" economy was named as a priority for sustainable development, ensuring not only the minimization of the negative impact on the environment, but also social justice and the well-being of the population.

The two considered approaches are united by the researcher T.A. Selishchev, according to which the "green" economy:

- ensures more rational use of natural resources;
- increases natural capital;
- uses alternative energy as a basis;
- contributes to improving the quality of life of people (Selishcheva, 2018).

In practice, the "green" economy is characterized as a closed-loop economy that minimizes the anthropogenic impact on the environment (Figure 2).

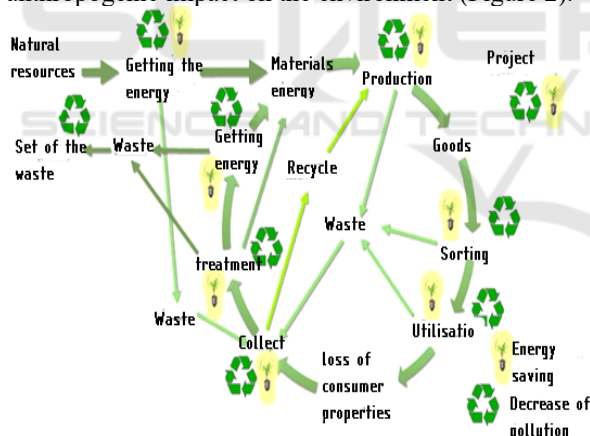


Figure 2: The concept of "green" economy.

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 model under study, which provides its internal movement and development (Statically compilation, 2019).

As part of ensuring the relationship between ecology and the economy in the Russian Federation, the national project "Ecology" is being implemented, which combines five main areas: "Waste", "Water", "Air", "Biodiversity", "Technology". The total amount of project financing is more than 4 trillion rubles. The national project "Ecology" has six main goals (Figure 3).

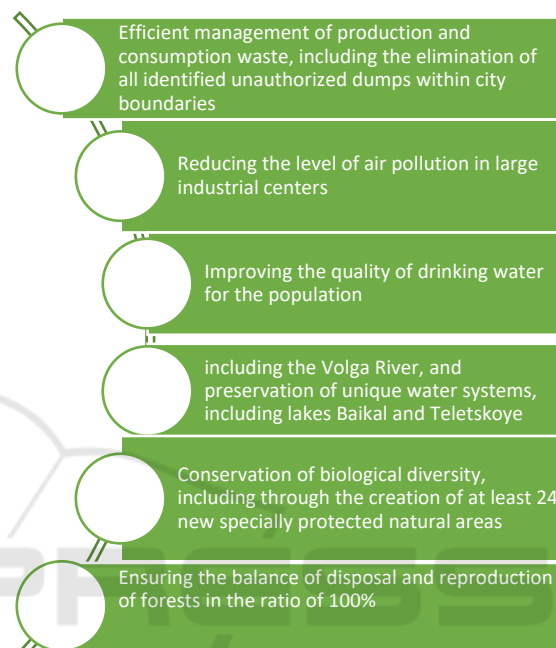


Figure 3: The structure of the national project "Ecology".

The structure of the national project "Ecology" includes 11 federal projects, each of which is characterized by its own system of indicators.

Thus, the federal project "Clean Country" involves the elimination of unauthorized dumps within the city and the elimination of the most dangerous objects of environmental harm. The most important goal of the project is to reduce the environmental damage associated with the disposal of municipal solid waste. The project is implemented by the Ministry of Natural Resources and Ecology of the Russian Federation. Thus, within the framework of the project, by 2024, it is planned to eliminate 191 unauthorized dumps within the boundaries of cities. In 2019, 16 landfills were to be eliminated, by 2021 - 76 landfills, by 2024 all sites with identified landfills should be reclaimed. Also, within the framework of the project, 75 of the most dangerous areas of accumulation of environmental damage should be eliminated (of which 67 by the end of 2021). These targets have been largely met.

The target indicators of the project "Integrated System for the Management of Municipal Solid Waste" are presented in Figure 4 (Lapusta, 2018).



Figure 4: The system of indicators of the federal project "Integrated System for the Management of Municipal Solid Waste".

The Clean Air federal project involves large-scale investments in reducing atmospheric emissions in the 12 most polluted Russian cities. The Clean Water project is being implemented by the Ministry of Construction in order to improve the quality of drinking water (Dedul, 2018).

In accordance with the project "Improvement of the Volga", the discharge of polluted wastewater into the Volga should be reduced by approximately three times. It is also expected to eliminate objects of accumulated environmental damage that pose a threat to the ecological state of the river. The project "Preservation of Lake Baikal" involves the construction of efficient treatment facilities that prevent pollution of wastewater entering the largest lake in the world. The project "Preservation of unique water bodies" involves the restoration of 24.5 hectares of water bodies and the clearing of 9,000 kilometers of the coastal zone. There is also a project to preserve forests and increase biodiversity. In accordance with the project "Introduction of the best available technologies", it is planned to introduce environmental monitoring systems in all industrial enterprises (Lapusta, 2019; Statistical compilation, 2019).

The calendar of events within the framework of the national project "Ecology" is shown in Figure 5.

From the diagram presented, it is clear that the plans for 2020 and 2021 have only been partially implemented. Thus, the national project "Ecology" began to be implemented two years ago, but so far the data on its results remain extremely contradictory. Consequently, in Russia, the deep interrelationship between ecology and the economy has not yet been

Calendar		
2018 r.	Complex system for reduce of air pollution by industrial organisations	Done
2019 r.	Audit of events	Done
2020 r.	Creation of electronic scheme of waste use	Partly done
	Creation of estimates of pollution	Partly done
	Implimentaion of air quality system	Partly done
2021 r.	Developing of state net of air control	Partly done
	Completing the baykal saving	Partly done
2024 r.	Development of "business and biodiversity" programm	Not done
	Construction and reconstruction programmes Tourist National parks	
	Creating new technologies for development of ecological car construction industry	

Figure 5: Results of the implementation of the national project "Ecology".

realized and rational measures have not been taken to ensure their coordinated development.

### 3 CONCLUSION

Evaluation of the effectiveness of the introduction of environmental practices in the Russian economy can be carried out using the Environmental Performance Index (EPI), formed at Yale University. The environmental efficiency index of the Russian Federation and its place in the world in terms of this indicator are shown in Figure 6.

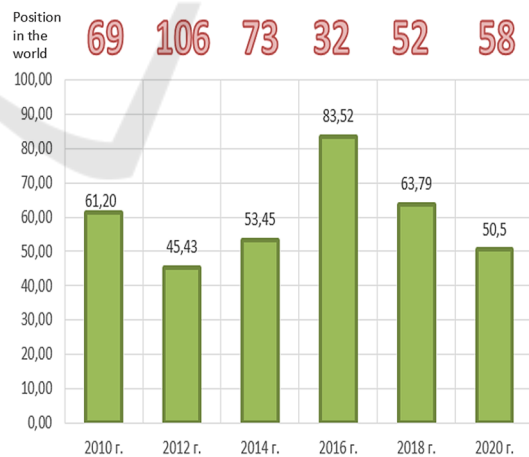


Figure 6: Environmental Performance Index (EPI) (EPI, <https://epi.yale.edu/>).

So, the best situation was observed in 2016, when Russia ranked 32 in the EPI index, which is 74 points higher than in 2012. As a possible reason for the "green leap" that Russia made during this period, one

can name a number of implemented initiatives in the field of environmental control.

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