

Problems and prospects of the economic development in the Republic of Buryatia under the conditions of ecological limitations

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Abstract. The article is devoted to the problem to solve the contradiction between economic development and environmental protection in the Baikal Natural Territory (BNT). We reveal the problems of unbalanced economic and environmental development of the Republic of Buryatia. We have conducted the economic losses analysis of the republic caused by the impact of environmental restrictions. We have carried out a territorial analysis of the economic development of Buryatia. We substantiate the necessity of distinguishing two types of economic policy in certain territories of the Republic of Buryatia, depending on the nature management regime: for the northeast of the republic and another part of Buryatia, which is part of BNT. We indicate the necessity of developing special mechanisms for the strategic management of the socio-economic development of Buryatia, including targeted support of the Government of the Russian Federation. Moreover, we have developed proposals for public authorities on a balanced solution of socioeconomic and environmental problems in BNT. We show the necessity of developing separate documents for strategic planning of the development of the Republic of Buryatia, taking into account the "Baikal factor" and the preparation of conditions for the new types of products produced in the republic intended for environmental protection.

1. Introduction

Economic development and the environment are closely interrelated and have a significant impact on each other. Economic growth leads to an increase in demand for resources, including natural resources, which leads to environmental degradation. On the other hand, environmental protection is associated with additional costs incurred by the economy. Underfinancing of environmental activities leads to environmental degradation and, consequently, economic losses from environmental constraints [1]. This determines the need to seek balanced economic and environmental development. This problem is most acute for territories with a special nature management regime, which includes most of the Republic of Buryatia.

2. Objects, data and methods

The Republic of Buryatia is a region of Russia, in which the impact of environmental restrictions on economic development is manifested most widely. The 1999 Federal Law "On Protection of Lake Baikal" on the Baikal natural territory (BNT), occupying 62.7% of the republic, introduced a special nature management regime, providing for the elimination and conversion of environmentally



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dangerous economic facilities as well as increased environmental requirements of production activities [2]. 97.6% of the Buryatia population live on the territory of the BNT. 19 out of 21 administrative districts of the republic are located there, and 6 districts are located in the central ecological zone.

The introduction of environmental restrictions negatively affects the economic development of the entire economic complex of the Republic of Buryatia, especially those sectors that are directly related to the use of natural resources (agriculture, fishing industry, hunting and fishing, forestry, etc.). The increase in production and transport costs of enterprises, additional capital costs for environmental protection, as well as direct and indirect losses associated with restrictions on production, reduce the economic competitiveness of the Republic of Buryatia [3].

Limitations on the use of chemical protective equipment and the application of mineral fertilizers reduce crop production, including forage crops, which also leads to a decrease in livestock production. Losses of income in the forestry complex of the Republic of Buryatia are due to the increase in current production costs of loggers due to the limitation of the dimensions of cutting areas and the increase in the complexity of cutting operations. The development of the republic's mining industry is hindered by a ban in the central ecological zone on exploration and development of new deposits, which was not previously affected by exploitation. Due to the significant negative impact on the Baikal ecosystem and the adjacent territory, some large investment projects are not being implemented, including the construction of the Kholodninsky mining and processing plant for the extraction and processing of polymetallic ore and the production of lead and zinc concentrates.

Due to a sharp decline in the omul population on Lake Baikal, a ban on its industrial production was introduced in October 2017, and amateur fishing led to a sharp reduction in a load of fish processing enterprises [4]. This decision was made without the necessary scientific justification for all factors, affecting the lake ecosystem and assessing the socioeconomic consequences for business and the public. There are doubts about the effectiveness of such a policy of administrative prohibitions and the alienation of the rights of residents to environmental management [5].

The introduction of a special nature management regime has become one of the main reasons for the deterioration in the performance of the primary sector of the economy in the republic (see table 1). The exception is the mining enterprises for the extraction of gold and uranium located outside the central and buffer zones of BNT, including the Okinsky and Bauntovsky districts.

Table 1. Performance indicators of the primary sector of the economy of the republic.

Type of economic activity	The proportion of unprofitable organizations, %		Share in the total number of employees, %		Share in gross value added, %	
	2006	2017	2006	2017	2006	2017
Agriculture, forestry, hunting, fishing and fish farming	26.2	28.6	14.1	8.4	9.0	4.0
Mining	44.4	56.2	2.4	1.7	3.4	5.2

Compiled by: Regions of Russia. Socioeconomic indicators. 2007: Stat. Sat / Rosstat. – M., 2007; Regions of Russia. Socioeconomic indicators. 2018: Stat. Sat / Rosstat. – M., 2018.

We have carried out a sectoral analysis of the economic development in the Republic of Buryatia under the conditions of a special economic activity regime on BNT, which shows the limited prospects for the development of the primary sector of the economy. We have revealed that environmental restrictions in agriculture, fisheries, forestry, and mineral-raw material complexes of the economy in the republic lead to significant losses in gross value added [6]. The total value of the gross value added lost due to restrictions on the business regime in the Republic of Buryatia is up to 20% of the gross regional product.

Under these conditions, the urgent task is to develop new scientific approaches, taking into account the prospects for the development of the region's economy as well as biosphere laws that replace the currently prevailing utilitarian-resource approach [7]. As foreign and domestic experience in

environmental regulation shows, the administrative methods, prevailing at the initial stage, are gradually replaced by measures of economic impact, including special programs, environmental agreements between government bodies and business structures [8].

3. Results and discussion

We have carried out a territorial analysis of the economic development in the Republic of Buryatia. Two territories are allocated depending on the nature management regime. The first includes BNT with a central ecological zone that has an area of 57.1 thousand km², a buffer ecological zone (162.37 thousand km²) and an ecological zone of atmospheric influence (0.8 thousand km²) [9]. There are environmental restrictions on the implementation of economic activity in this territory. The second part of the territory of Buryatia, which is not part of BNT, is located in the northeast of the republic (Bauntovsky, Muysky as well as partially Eravninsky and North Baikal districts). This territory is characterized by a sparse economic space, low population density, and a low provision level with transport and energy infrastructure facilities.

We substantiate the need to distinguish two types of economic policy in certain territories of the Republic of Buryatia, depending on the nature management regime. For the northeast of the republic, it is advisable to use the available tools of economic development of resource-type territories aimed at the development of natural resources. The basis for the development of the Muysky District may be the construction of the Mokskaya hydroelectric station and the Ivanovo counter-regulator aimed at providing electricity to the mining facilities of the Trans-Baikal Territory and the Irkutsk Region [10].

For another part of the Republic of Buryatia, which is part of BNT, a different type of economic policy is necessary, taking into account the special regime of economic activity. Under the conditions of environmental restrictions, the competitiveness of the economy of Buryatia decreases. The development of the economy in the republic follows an inertial path through the use of production facilities created in the past.

Large industrial enterprises of the republic, which determined the development in the region: an aircraft plant, a locomotive-car repair plant, an instrument-making association, and a metal-bridge construction plant, have experienced significant problems in recent years due to the narrowing of the sales market, lack of updating the product range and a high degree of depreciation of fixed assets. The Republic of Buryatia is located in the zone of risky farming, which objectively restrains the development of agriculture. In recent years, the largest food industry enterprises have been closed: Baikalfarm OJSC and Makbur OJSC. The confectionery factory Amta and JSC Milk of Buryatia experience significant difficulties.

In our opinion, the economy in the Republic of Buryatia has practically no competitive advantages in comparison with other regions. There is no clearly defined specialization, such as in the Irkutsk Region, which has a powerful industrial complex: Angara cascade of hydropower stations, processing industries, aluminum plants, etc. The mining industry is actively developing in the Trans-Baikal Territory. In the Republic of Buryatia, this is not possible due to severe restrictions caused by the "Baikal factor". This prevents the use of the traditional approach to economic development based on the competitive advantages of the region.

Our position is that in conditions, where there are no obvious competitive advantages, weaknesses should be emphasized, i.e. problems solving. Firstly, the pollution of Lake Baikal is very acute. Its purification is a task of federal and even world level. Under these conditions, the Government of the Republic of Buryatia should prepare proposals for the formation of a federal order, including measures for the protection of BNT, for example, projects for water purification and recycling of water, restoration, rehabilitation and restoration of the land as well as environmentally safe waste management. A separate task is a struggle against spirogyra. The federal order should be understood as the demand of the state to solve a specific problem. Without the involvement of federal resources, the problem of pollution at Lake Baikal will not be solved.

Secondly, it is necessary to create conditions for the formation of a new direction for the development of the economy (specialization industry) in Buryatia: the production of products used to

protect the environment. In our opinion, this includes equipment for the disposal of sewage sludge, a new generation of treatment systems (for cleaning new pollutants), sorbents and reagents for wastewater treatment and the preparation of drinking water, equipment for the processing and disposal of various types of sorted and unsorted municipal waste.

The republic is not able to independently solve the problems of socioeconomic development, taking into account environmental requirements. This determines the need for assistance from the federal government in the implementation of federal, interregional and republican measures for the environmental protection of BNT and regional socioeconomic development programs.

In our view, there is a need to develop a separate program for "Socio-economic development of the Republic of Buryatia". The proposed document should be aimed at the priority development of industries in the republic that is not related to environmental pollution, including engineering, instrumentation, bio pharmacology, production of environmentally friendly agricultural products, recreation, and education. One of the promising directions for the development of the economy of Buryatia may be the serial production of products used to protect the environment.

4. Conclusion

The introduction of environmental restrictions on BNT has led to significant losses in the primary economic sectors of the Republic of Buryatia. An urgent task is a transition from administrative methods of state regulation of environmental protection to measures of economic influence on the development of the region. In the conditions of insufficient competitiveness of the branches of the economy in Buryatia due to environmental restrictions, there is a need to use new approaches to the development of the republic. In developing the economic policy of the region with a special nature of management regime, we propose to focus on solving environmental problems and the product development designed to protect the environment. It is necessary to prepare a separate program for the development of the Republic of Buryatia, providing for the creation of conditions for the formation of new sectors of economy specialization in the republic.

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