State and business co-operation in settling socio-economic issues: forward to sustainable development of ecologically unfavorable regions

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Abstract. The complexity of socio-economic issues of mono-cities located in the ecologically unfavorable regions of Eurasia was disclosed. The economically strategic role of city-forming mining enterprises and their impact on ecological situation was revealed. The general conception of settling the socio-economic problems of mono-cities located in ecologically unfavorable regions was worked out. Various approached to the concentration of financial resources for economic and ecological sustainable development of the regions located on the north of Eurasia holding nature protection actions were submitted. Based on performed critical analysis of the positive international experience of ecological taxation some approaches to reforming current Russian system of ecological taxation were suggested. It was revealed that increasing the social responsibilities of business in the field of waste recycling, environmental protection and monitoring of ecological conditions of territories and state and business cooperation are the most efficient opportunities in settling socio-economic issues of ecologically unfavorable regions.

1. Introduction

Nowadays the problem of industrial impact and influence on the surrounded areas remains one of the most important environmental problems. It is well known that the ecological sustainability of regions stays in conflict with the industrial strategy of the regional development, which determined the level and life stability of the population.

Not only each component but also the whole ecosystem is affected by the industrial impact. This impact destroys the links of the components interdependency and as consequence the sustainability of whole biosphere on the global level. It is impossible to take cardinal measures in the form of closing of industrial objects because most of them are strategic enterprises of the national or regional level. Very often those enterprises are city-forming (mono-cities/ one company town) and they are the only opportunity for employment and financial stability of citizens. City-forming enterprises generally provide activity and life conditions in the city and surrounding territories. Labor market situation of mono-cities strongly affects on the socio-political stability in general in the region. The economy of Russia is substantially represented by the city – forming enterprises whose contribution to the Gross Domestic Product (GDP) is approximately 20-40% depending on the methodology of assessment [1]. City-forming enterprises should be treated as a unique Russian economic-geographical phenomenon. Those enterprises provide in natural indicators about 64 % of oil extraction, 83% of gas extraction, 53
% of coal extraction and almost 90% of nickel. [2]. A significance of problem mentioned above is underlined by the fact that list of mono-cities with risk of socio-economic situation deterioration is approved by the Government of Russian Federation, Order № 1398-r as of 29.07.2014. The following fact is geographically determined: in Russia mining companies are generally concentrated in the “cold” regions of Eurasia, so the ecosystems are characterized by the cold climate conditions.

The population of mono-cities located in the “cold” regions of Eurasia is especially unprotected in social and economic aspects, which is totally explainable by not only the single option employment of population, which has no alternatives, but also by the fact, that the ecosystems of these regions are the most sensitive to anthropogenic influence, especially industrial impact [3]. Extraction and processing of minerals determinate the technogenic initiated influence on the ecosystems and the health of population of the mono-cities. The specificity of the technologies in present time does not allow using the direct methods, which can protect the industrial induced contaminations.

The example of mono-city, which could be taken under consideration, is town Nikel (Murmansk region, Kola Peninsula). The city-forming enterprise is Mining and Metallurgical Factory “Pechenganikel”, which was founded in 1945 and so far is one of the most important factory of mining and processing of sulfide cooper-nickel ores in Russia. Despite the factory retooling [4] the negative impacts on the population health have been found: increase of the frequency and numbers of diseases of reproductive system, respiratory, cancer and childhood diseases; compromised immune system; and decrease in life expectancy [5]. Evaluation of the industrial impact on the ecosystem has been also reported [6]. It was demonstrated that the contamination traces was found within 7-10 km distance from the factory. Soils and vegetation here are characterized by the features and characteristics, which are common for the ecosystems in this zone. Nevertheless a permanent monitoring of pollutants concentrations in the soils and vegetation including mushrooms and berries collected in these areas and used for human consumption is absent.

2. The problem statement

Thus, the investigation of a list of problems of mono-city given above on an example of town Nickel has revealed that besides the most considered and deeply studied block of problems connected with (a) contamination of not only each component but the whole ecosystem, and (b) health of citizens, one more aspect of problems is reasonable to disclose. Socio-economic aspects of ecological sustainability of unfavorable regions usually escape from the consideration.

Based on the lack of such approach in the investigations the aim of current research is to work out the general conception of settling the socio-economic problems of mono-cities located in ecologically unfavorable regions. According to the main target the following issues were under consideration:

1. Analysis of possibilities of destruction affected by industrial impact on the ecosystem by the Mining enterprise was undertaken.
2. Analysis of current ecological taxation system in Russia was performed with the aim of working out the possible ways of its optimization.
3. Positive international experience of ecological taxation was generalized in order to disclose the abilities of its implementation in Russia.
4. Ways of increasing the social responsibilities of business in the field of waste recycling; environmental protection and monitoring of ecological conditions of territories were presented.

3. Results and discussion

The following attempts concerning the improvement of the ecological situation in the areas, which are under the permanent impact of the Factory contamination(s) were undertaken in 2004–2008 years. The large area including technological barrens was covered by the remediation. Two variants of the remediation were used: (i) ecological approach (i.e. planting of trees and perennial plants, the use of fertilizers and meliorant substances) and (ii) the most expensive and money consuming approach, in which the soil cover is changed. Taking into account the amount of expenses and the significant work intense of the remediation results [7] it was disclosed that even huge monetary investments were not
successful to return the considered ecosystem back to its initial uncontaminated level. One of the most significant reasons of unsuccessfulness of such approaches is extremely high sensitivity of ecosystems of Eurasian cold regions to the external impact. As it was indicated above closing of the city-forming enterprises is absolutely impossible because they are the only opportunity for employment and financial stability of citizens. And closing of such enterprises will evidently destroy the socio-economic balance of the region. It is logically to find legal and economic mechanism of providing relevantly comfortable life conditions for the population of mentioned region.

Taking into account the specificity of the mono-city, the research of approaches to create the financial resources for environmental protection on the municipal level is of interest. According to the Budget Code of the Russian Federation (subpart 3 part 3 of the Article 21) budgets of the budgetary system of the Russian Federation, including municipal budgets, are meant to cover expenses on environmental protection, which include the following items: 1) ecological control; 2) waste collecting and disposal, sewage water treatment; 3) protection of biological objects (vegetation, animals etc.) and their habitats; 4) development of applied scientific research in the field of environmental protection.

In this case, it seems to be logically to assign a duty of holding nature protection actions to municipal unit, on which territory there are objects, carrying out negative impact on the environment due to their functioning specifics. However, actually there is a question of insufficiency and / or the actual absence in the municipal budget of funds for holding the specified actions.

At the same time, the Budget Code of the Russian Federation hasn't provided existence of the trust funds, in which the funds allocated for environmental protection at various levels of the budgetary system would be accumulated. It is logically clear that nature-resource payments have to be a source of such funds. Due to absence of the trust funds for holding nature protection actions, a sources of their financing actually are the local budgets in general filled at the expense of tax (a land tax, the individual property tax and also a share of the corporate profit tax enlisted in the local budget), non-tax (income from use of property and financial aid of higher budgets) and other (free aid, etc.) income.

Payments for utilization of natural resources represent set of payments of two types introduced by Russian legislation: for environmental management and for negative impact on the environment. The complex character of nature-resource payments is shown in variety of their functions, the most important of which are compensatory, stimulating, fiscal and ecological [8]. According to the Budget Code of the Russian Federation, 55% of the amount charged as the payment for negative impact on the environment is allocated to the municipal budgets, whereas the Mineral Extraction tax is not enlisted in the municipal budget in general, in full coming to the federal budget. Insufficiency of own funds of municipal budgets results in impossibility of carrying out effective of full-scale nature protection actions on the territory of municipal unit including environmental control and applied scientific research in the field of environmental protection.

In this case, it is absolutely essential to reconsider approaches to creation of funds and generating resources on performing nature protection actions. Increase of payment for environmental pollution will lead to unreasonable increase of fiscal burden to enterprises. In the situation when the economy is overcoming consequences of a world economic crisis with great difficulties, it will negatively affect the investment and tax climate in general. For the company like «Pechenganikel’», substantial increase of fiscal burden inevitably will happen due to reduction of funds which can be potentially directed to expanded reproduction, updating of technological base, expenses on research and development, stimulation of activity of personnel.

Therefore, increase of the extended prices paid by the enterprises for environmental pollution is not an effective way of accumulating resources for providing nature protection actions. One of the efficient ways of settling this problem without overloading tax burden of the city-forming enterprises, is reconsidering the current model of tax federalism in Russia. Excessive concentration of tax income on the federal level without corresponding changes of expenses authorities does not stimulate regions the expansion of own tax base, reduces interest to increase in the budgetary income and rationalization of the budgetary expenses. However now the emphasis is placed on subsidized forms of regulation of the inter-budgetary relations; problems of depressed areas not only remain, but also are aggravated;
problems of regulation of financial flows on all vertical of the budgetary system are not solved. Orientation on more tax self-sufficiency is reasonable to consider as a powerful stimulus of activities of regional authorities and local governments for development of financial and economic capacity of territories.

For this purpose it seems to be reasonable to reconsider the proportion of contributions to regional and municipal budgets as on resource payments (like Mineral Extraction tax and a payment for negative impact on the environment), and on the key taxes (say, value added tax) at the moment coming in full to the federal budget of the Russian Federation. This measure will positively affect to significant growth of self-sufficiency of municipal units and will base a possibility of creation their own resources for carrying out at the local level nature protection actions. But the fiscal burden of the enterprises of the considered region will not be increased.

In search of approaches to settle the problem of creation funds for holding nature protection actions on the local (municipal) level it is reasonable to consider the international experience of ecological taxation. Distinctive feature of the European tax system is a significant amount of such taxes, which are in general neutral for the state budget. Historically at the moment of ecological taxes introduction there was a decrease of contributions to social funds for the corresponding amounts and / or adjustments in the income taxation were made.

The analysis of the ecological legislation of Great Britain is of the utmost interest, the nature protection legislation of the Great Britain was actively developing in the 1990th and the beginning of the 2000th. On the basis of the analysis and creative application of experience of the ecological taxation in Great Britain it is possible to make a conclusion about reasonability of consideration as the perspective direction of reforming of system of taxes and fees in the Russian Federation, the mechanism of tax deductions (e.g., for the corporate profit tax) [9]. Such tax deduction can be offered for the enterprises, which are carrying out adverse impact on the environment due to specifics of the activity makes investments in the project of environmental protection and control, in particular, in holding independently financed actions for environmental contamination monitoring and applied scientific research in the field of environmental protection. We note that this measure will not lead to direct increase of income of local and regional budgets, but will allow to use effectively mechanisms of the state – private partnership in the solution of environmental problems.

It is hard to underestimate the role of state and business co-operation in solving problems of ecologically adverse territories. Identification and implementation of additional opportunities provided by private sector of economy is critical necessary in those cases, when the government is not capable to cope with a problem effectively. Not only nature-protection issues, but all complex of socio-economic problems is finance-consuming and there is shortage of state/ regional/ local budget for financing those activity. In current situation, business could provide the relevant financial recourses for covering such expenses. On the one hand, business helps to find funds for solving problems for which there is not enough money on the state or regional level. On the other hand, there is an outstanding opportunity for business to strengthen the image demonstrating the policy of social responsibility.

According to the open documentation Kolsk mining company in 2015 undertook the following measures: 1) clearing of a technical sludge pond on the industrial site in Monchegorsk; 2) preparation in reconstruction of the treatment plant of mine water (mine “Severnyi”); 3) building of treatment plant for a salt drain of nickel refinement is continued; 4) the subsequent work on cleaning the outflow of the «Severniy» mine continues.

The above-mentioned company develops ecological partnership and co-operation with Finland and Norway in order to share positive international experience of nature-protection activities organization. In solving ecological problem state and business co-operation can be applied in various ways. However, the most widespread way is environmental monitoring provided by the enterprise itself. This activity is quite traditional way of environmental care, but following development of this work is essential for further efficiency. The idea of expansion of responsibility of the organizations, which activity is inevitably connected with environmental pollution, consists in improvement of the
organization of waste utilization management at the enterprise. Such idea assumes that beside those problems, which are solved by the producer inside the organization, tasks existing outside the enterprise also have to be implemented. Creation of joint infrastructure for performing nature protection actions by the organizations (including environmental monitoring), which are carrying out environmental pollution, allows to accumulate financial resources in volumes, when each separate enterprise is not able to afford, solving environmental problems in an individual order.

In our opinion, the most effective and productive mechanism of expansion of responsibility is cooperation of producers. This way is generally focused on the consumer and allows the state to reduce administrative burden in this area. At the same time the lack of the governmental support sometimes leads to serious negative consequences. Also should not skip the fact that unconscientious producers can enter the association with the purpose of getting personally both financial and reputational benefit.

Such policy of expansion of social responsibility by the organizations whose activity is unavoidably connected with environmental pollution, in general is favorable to the state, because allows to reach the solution of tasks in the sphere of environmental control and holding nature protection actions, without providing additional financial resources from budgets of the budgetary system of the country. However, without the state support achievement of the target becomes unreal. One of the most significant problems is insufficiently developed legislation. To eliminate this defect it is necessary to define accurately a role and responsibilities of each member on such co-operation:

1. producers undertake financing of all projects running by the co-operation;
2. the government establishes standards and rules of recycling;
3. regional authorities can update requirements and also have to provide control;
4. municipal authorities support realization of this policy at the correspondent level;
5. merging of producers operates this activity on behalf of their members in partnership with authorities and also inform the citizens and the state on results of the carried-out work.

One of the directions of realization this state-private partnership in the solving of problems of ecologically adverse territories, is the co-operation of the state and the enterprises polluting the environment for monitoring of zones with the increased level of air and the soil pollution, and also creation of the research laboratories in joint maintaining the state and enterprises.

As the result, the above mentioned approaches disclosed in this research is the development of the statement concerning of socio-economic sustainability of mono-cities located in ecologically unfavorable regions [10].

4. Conclusion

Based on the analysis of the specific features of the mining enterprises impact on the environment we can conclude that the ecological sustainability of regions is keeping in conflict with the industrial strategy of the regional development, which determined the level and life stability of the population.

As it was revealed, just only ecological approaches and mechanisms including expensive and work intense remediation are not successful to return the considered ecosystem back to its initial uncontaminated level and cannot provide the sustainable development of the ecologically unfavorable regions. It is impossible to take cardinal measures in the form of closing of industrial objects because most of them are strategical enterprises on the national or regional level and being city-forming ones they are the only opportunity for employment and financial stability of citizens. In this case, it is essential to provide social support and financial stability for population of ecologically unfavorable region. At least actions for environmental contamination monitoring and applied scientific research in the field of environmental protection should be performed. Due to the insufficiency and / or the actual absence of funds for holding the specified actions in the local budget, it is necessary to search out resources for undertaking these activities. Increase of payment for environmental pollution will lead to unreasonable increase of fiscal burden of enterprises. According to our opinion, the most effective and productive way of solving socio-economic problems of ecologically unsustainable region is strong co-operation between state and business and increasing the social responsibilities of business. Creation of joint infrastructure for performing nature protection actions by the organizations (including,
environmental monitoring) which are carrying out environmental pollution allows to accumulate financial resources in volumes which each separate enterprise is not able to afford, solving environmental problems in an individual order.

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