Environmental engineering and management during mining in the Arctic: indigenous communities and business cooperation

V Gassiy
Kuban State University, 149 Stavropolskaya st., Krasnodar, 350040, Russia

E-mail: vgassiy@mail.ru

Abstract. The article discusses the issues of the interaction between indigenous peoples and business in environmental management in the context of the Arctic development. The author analyzes the current legislation on environment management related to the subsoil users and indigenous peoples, gives case-studies of such cooperation during mining. The implementation of corporate social responsibility during the interacting of indigenous peoples and business is considered in the paper, including investments in the development of social infrastructure, education, employment. It also discusses the main objectives of the development of the Arctic territories, which include improving the welfare of the population, solving social and economic problems. The author proves that research on the development of approaches and mechanisms for coordinating interests in traditional lands is relevant, since each stage of the investment project should include a set of tools and methods aimed at the negotiation process, the calculation of damage, monetary compensation, etc. Based on a study of statistical and legal data, the author justifies the need to develop mechanisms for cooperation and partnership between business and indigenous peoples to achieve the goals of sustainable development of the territory.

1. Introduction
In the Basis of the State Policy of the Russian Federation in the Arctic for the period up to 2020 and beyond (2008), the territory of the High North is considered as a strategic resource base for the development. In recent years, there has been a process of active industrial development of the Arctic territories, including traditional lands. The priority directions for the development of the Arctic zone of the Russian Federation and ensuring national security are:

- Socio-economic development;
- Science and technology development;
- Construction of modern information and telecommunication infrastructure;
- Ensuring environmental safety;
- International cooperation in the Arctic;
- Ensuring military security, protection of the state border of the Russian Federation in the Arctic.

The current socio-economic development of the Arctic zone of the Russian Federation is characterized by the risks and threats in the social sphere, which are the low life quality of indigenous
peoples, the outflow of labor resources and negative demographic processes in most Arctic and Subarctic regions of Russia. The main task of the government is to increase the welfare of the population, to reduce the income gap between various social groups, to improve the life quality. Currently, the income gap in the Arctic is significantly lower than in the country, but further reduction of this indicator is necessary (table 1).

Table 1. Income ratio 10% most and 10% less well-off

| Area                                 | 2016 | 2017 |
|--------------------------------------|------|------|
| Arctic zone of the Russian Federation| 8,3  | 8,2  |
| Russian Federation                   | 15,5 | 15,3 |

The future of the Russian Arctic is associated with the exploration, mining and further subsoil using, which are the multipliers of modernization of the country's economy. Here the issues of correlating the indigenous communities’ needs with the goals and objectives of companies-subsoil users are relevant. The interests of the indigenous peoples include culture and traditions conservation, traditional nature use, reindeer herding etc. Therefore, it is important to develop the cooperation and partnership mechanisms for the business and indigenous peoples. It will help to avoid the conflicts in the Arctic during every stage of the investment project realization. In modern Russia there are enough case-studies on such forms of the interactions when the target groups coordinate their interests in the sphere of environmental engineering and management. Primarily these are Republic of Sakha, Krasnoyarsk region, Chukotka, Sakhalin where the business processing on traditional lands cooperates with indigenous communities.

It should be noted that industrial activities impact on traditional lands and the environment on which indigenous peoples depend. The Basis of the State Policy on the Environmental Development of the Russian Federation for the period until 2030 provides the solutions of the environmental problems of the High North, the territories of traditional nature use. Constitution of the Russian Federation warrants the rights of indigenous peoples for the traditional lands, culture and way of life. Ensuring these rights and the creation of conditions for the traditional culture development is the responsibility of the federal and regional government. In 2019 Yakutia has included to this list the municipal authorities.

In our opinion, one of the main directions of improving the legislation on the protection of indigenous rights could be:

- Development of mechanisms for priority access to biological natural resources;
- Development of reindeer husbandry as the basis for the language and culture preservation;
- Development of indigenous self-organization based on historical and national peculiarities [1].

The implementation of the rights of indigenous peoples is complicated by the industrial development of the Arctic territory. The Arctic is a very specific place of Russia, where unique human capital is preserved. Industrial development is progressing in the heart of the Arctic, affecting more and more traditional lands. Regional and municipal governments are facing a dilemma - an increase in tax revenues or the preservation of the traditional way of life. If their decision is inclined to the business side, then this does not mean that there are no tools for compensation and impact assessment of such interference. However, in contrast to the benefit sharing system in the United States, Canada, Australia, in modern Russia, such mechanisms do not actually exist. Until now, there isn’t neither a single formula for calculating, nor legislation for the compensation payments. In each case, business and indigenous communities have to negotiate on cooperation. The exception is Yakutia, where a law on ethnological expertise was passed.

2. Ethnological expertise as a tool for environmental engineering and Arctic sustainable development

The future of the Arctic is connected with the exploration and processing the natural resources
(hydrocarbons, rare earth metals, and diamonds) as well as the increasing pressure on the unique ecosystem which leads to the changes of traditional lands. We are speaking about the indigenous peoples of Siberia and the Far East. This region is in focus of the state interests. In Strategy of national policy one of the goals is declared as following: “to develop the conditions for the indigenous participation in the solving the problems affecting their rights and interests”. Considering today tendencies the problem of the coordination of business and indigenous interests is urgent. The concept of such cooperation must include a wide specter of the tools as the investment project supposes different stages of the realization. Among them there could be negotiation management, calculating the damage, monetary compensations etc.

At present the territories of traditional nature use are affected by significant ethno-cultural, socio-economic and environmental changes. They impact the traditional activities of indigenous communities. Regional and local governments have to seek for new approaches to the change management. They have to adapt and to respond the challenges. The industrial development energization assumes the withdrawal of traditional lands and their engaging to the economic turnover. In this context the compromise between business and indigenous communities is depended on the development of the system for damage and lost profit compensation.

Of course, the industrial development of the traditional territories is currently determining the prospects for indigenous socio-economic and ethno-cultural development. First of all, it is necessary to solve the main task of the Arctic development - raising the welfare of the population, social and economic problem-solving. In this situation, the development of new fields and mining the corporate programs for the local employment will solve the problems of unemployment. This indicator is higher in the Arctic zone compared to other Russian regions (figure 1):

![Figure 1. Unemployment in the Arctic zone of the Russian Federation in 2018, %.](http://www.gks.ru/free_doc/new_site/region_stat/calendar1-2019.htm)

Considering the strategic character of Siberia and the Far East it is necessary to pay a state attention to the harmonization of the target group interests as well as the mechanisms of their interactions to the economic, social and environmental problem-solving. One of the important tools for indigenous identity preservation is the partnership development with subsoil-users [2]. This will facilitate the process of determining compensation including measures for the sustainable development of the territory. It must be admitted that in the regions of Russia the process of developing and introducing a mechanism for
Damage compensating is very slow, and somewhere it does not develop at all. However, in some regions, this process is being improved; the institution of the Indigenous ombudsmen has developed. One of the key tools for the business and indigenous peoples’ interactions is the ethnological expertise, which was adopted in the Republic of Sakha. Yakutia became the first region of the country where they established rules for impact assessment on ethnological environment during mining. Ethnological expertise is a scientific study of potential changes in the traditional lands and environmental management. This tool contributes to avoid conflicts, to reduce possible social tension and to find effective mechanisms of business and indigenous people’s interaction [3].

Ethnological expertise is a comprehensive study in which various specialists take part: ethnologists, sociologists, archeologists, economists, lawyers, etc. That is why there are many scientific approaches to understanding the essence of industrial development, its impact on the ethnological environment of indigenous peoples, links between corporate social responsibility and sustainable development of the traditional lands.

Ivan Potravny considers corporate social responsibility through the need to develop the mechanisms for coordination of the target groups’ interest and to use the model of the damage compensation [4]. A significant contribution to the study of the traditional nature use and management is made by the Russian scientists on the market assessment of the ecosystem services, risks in the traditional nature use, the development of specially protected natural territories. S. Bobylev and V. Zakharov suggest the mechanisms of the eco-services’ compensation in environmental engineering [5].

An important issue in the interaction of indigenous peoples and business in mining is a partnership agreement. They should include compensation for the land use, as well as business participation in the socio-economic development of traditional lands. According to the Russian legislation, subsoil users are obliged to conclude agreements with local communities on socio-economic development. As a rule, such documents are subject to negotiations between the local government and business. The scope of investment and the amount of financial support are determined. In our opinion, one additional tasks of local government could be encouraging and stimulating the population for economic activity using the received monetary compensation. Such a policy could be implemented in conjunction with plans and programs for the socio-economic development of traditional lands [4]. Such practice is widely used abroad where the indigenous peoples participate in the economic development as an independent economic player, following the goal of conservation of their customs, crafts and culture. For example, the experience of the USA and Canada in solving the socio-economic, environmental and ethno-cultural problems of the indigenous peoples is quite successful. The economy of the northern territories of these countries is characterized by duality. On the one hand, there is an active exploration and mining, on the other - a comprehensive state policy is being pursued to support and preserve the culture and traditional way of life, as well as traditional nature management. In this regard, the system of socio-economic relations in recent decades has undergone a significant transformation due to inclusion of such entities as indigenous (aboriginal) corporations acting on the basis of benefit sharing, land use agreements, environmental protection, socio-economic development, etc.

In Russia, due to the limited potential of income earning, the indigenous peoples are dependent on the policies of federal, regional and local government, and their associations have the status of NGO. They operate in the whole territory of Russia where there are indigenous peoples and could be considered in the future as the aboriginal corporations. In our opinion, radical changes in the status of such associations should not be expected in near future. This would require the revolutionary transformations of the entire system of political, legal and social relations in Russia. Therefore, the partnership between business and indigenous communities seems to be the only efficient mechanism for sustainable development of traditional lands. In recent years, in Russia, the issue of social responsibility of business has become particularly acute, including the regional level. Due to some reasons the state is not able fully to ensure a social protection. So the social programs of business are becoming increasingly important. Thus, social partnership implies the interaction of business and indigenous communities in accordance with ethical standards for sustainable development that provides the balance of its ecosystem.
In Russian practice, there are several examples of the successful interactions of business and the indigenous peoples during mining of the Arctic. Among the main activities of social responsibility, are the following:

- Construction of social infrastructure such as hospitals, kindergartens, homes for orphans etc;
- Air transportation of indigenous peoples, cargo delivery;
- Delivery of agricultural products to reindeer herds;
- Construction and maintenance of roads;
- Support of culture and sport in the indigenous communities.

3. Conclusion

Obviously, the corporate social responsibility means not only the taxes and wages payment, labor protection measures, but also the creation of external environment that is favorable (sustainable and safe) for economic activity [6]. The sustainable external environment allows to predict and to plan the long-term business development and, consequently, to increase the profit. This is achievable, through the human capital development of traditional lands where the company mines. For business it is profitable to implement educational programs to train the local population and then hire them to the company.

Thus, the problem of cooperation between business and indigenous peoples in environmental engineering and management during mining is very complex. It requires consideration of many factors, including differences in goals and needs of stakeholders. Improving legislation and developing mechanisms for cooperation between indigenous peoples and business is a solution to this problem.

Acknowledgment

The paper was prepared by the financial support of the grant of the President of the Russian Federation for state support of young Russian scientists – doctors MD-402.2019.6.

References

[1] Sleptsov A N 2014 Arctic vector of development *High. Educ. Russ.* pp 115-22
[2] Gassiy V and Potravny I 2017 The assessment of the socio-economic damage of the indigenous peoples due to industrial Development of Russian Arctic *Czech Polar Rep.* 7 257–70
[3] Poravny I M and Motorina M A 2017 Development of Support Zones in the Russian Arctic Based on the Design Approach *Economy Horizons* 6(39) 31-7
[4] Gassiy V and Potravny I 2019 The Compensation for Losses to Indigenous Peoples Due to the Arctic Industrial Development in Benefit Sharing Paradigm *Resources* 8 71
[5] Bobylev S N and Zakharov V M 2011 *Modernization of Economy and Sustainable development* (Moscow)
[6] Novoselov A, Potravny I, Novoselova I and Gassiy V 2017 Selection of priority investment projects for the development of the Russian *Arctic. Polar Sci.* 14 68-77