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Socio-economic patterns of development planning in rural areas and targets of land management in industrial regions

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Abstract. The article is devoted to the analysis of the influence the coal-mining industry has on the development of rural territories, as well as identifies the tasks of land management of industrial territories. The paper proposed directions for developing programs for cross-border cooperation in the framework of resettlement of those residents living in the areas undermined by mining.

1. Introduction

According to statistics, a number of rural population in Russia decreases annually (38 million people in 2015, 37.6 million people in 2018) [6]; however, a percentage ratio of the urban and rural population in the Russian Federation does not change from 2009 (74% and 26%, respectively). This trend is also characteristic of the Siberian Federal District. In 2016, the All-Russian Agricultural Census showed a decrease in the number of agricultural organizations, as well as in the number of peasant farms and private entrepreneurs. This trend is characteristic not only of the Kemerovo Region and the Siberian Federal District, but also of Russia in general [5].

Most of the rural settlements are dying or on the verge of extinction. After the 2014 sanctions were imposed, certain measures were taken to support the agro-industrial complex, but they have only a small effect. There are various reasons for that. For instance, budget funds do not fully reach the direct producers. More than that, peasant farms and partially current joint-stock enterprises (former collective and state farms) still dominate, and they cannot provide either a large-scale increase in quality products, or growth in labor productivity.

In the rural labor market compared to urban problems, associated with labor activity of the population, unemployment, income levels, poverty and tension in the rural labor market as a whole. Economic and social problems existing in rural areas contribute to migratory attitudes, and for the most part among young people and the able-bodied population. Monitoring of the state of rural areas in the Russian Federation reflects the main reasons for the migration of rural residents: lack of jobs, low salaries and social benefits, lack of prospects [7].

Social differences between urban and rural populations have a protracted nature and tendencies to exacerbate. Industrial regions, in fact, do not pay attention to developing agriculture and providing support for its inhabitants. In absolute terms, GRP (gross regional product) grows at the expense of other industries, while agriculture remains outside its framework. The main problems: (1) reducing the number of jobs; (2) failure of most agricultural machinery; (3) low salaries; (4) lack of infrastructure.

Rural settlements in regions with a developed coal industry also suffer from the operation of coal mining enterprises, since the main percentage of coal production is carried out by the open method,



which leads to large-scale pollution of agricultural land and, accordingly, to a reduction in the number of rural settlements and rural territorial associations.

2. Materials and Methods

The methodological basis of the study consists of general scientific methods of cognition (retrospective and comparative analyzes, synthesis, induction, deduction), which made it possible to obtain reliable and reasonable research results. The digital data were taken from the federal and regional sites of state statistics, administrative Internet resources, as well as from the data of annual state reports on the state and protection of the Kemerovo environment. Analytical and scientific materials were obtained as a result of the study and synthesis of various theories, approaches and scientific developments.

Mining enterprises have to create a favorable social environment in response to the loyalty of the local government and residents. Those companies that do not develop and do not embody an active policy of support and development of the areas of presence, do not work with the population, stumble upon the active social discontent of citizens living in the area of activity of mining and processing industries.

Studies of social tensions show that in extractive and old industrial regions, the “environmental tensions” factor holds the greatest weight in 3rd place in the Urals region, 7th in the Siberian region and 4th in the Tyumen region. The situation developing in the territories bordering the coal-mining enterprises does not contribute to social stabilization. Therefore, as one of the solution methods, it is proposed to use agreements on mutually beneficial cooperation between cross-border regions.

3. Results

Since the start of mining operations at the mines in the Kuzbass, over 55 thousand hectares of land were disturbed, and more than 35 thousand hectares of mines, about 91 thousand hectares of land were disturbed, and this is without taking into account the influence of enterprises on the adjacent territories. At the same time, the climatic and soil resources of the region make it possible to grow various agricultural crops, from grain bread standards to vegetables in open ground. The economy of the region as a whole is insignificantly influenced by agriculture, but this industry depends on the results of providing the residents of the region with food.

The state of agricultural land area can be assessed as catastrophic. The Kuzbass coal-mining areas are particularly hardly hit. For instance, the disturbed territories of the city of Prokopyevsk make up 21%, the city of Kiselevsk 28%, the city of Mezhdurechensk 14.6%, the Belovsky District 3%, and the Novokuznetsk District 1%. The total area of waste dumps formed in open-cast coal mining is 34.3 thousand hectares. At the place of their formation, the external dumps (that is, outside the mining allotment of enterprises) occupy 22.5 thousand hectares; they are the hydraulic tailings formed by the hydraulic method of overburdening loose sediments, their area is 5.6 thousand hectares. Internal dumps, i.e. being dumped in the developed space, occupy 6,2 thousand hectares [1].

For all the time of economic and social development of the Kuzbass region, the total area of reclaimed land has been slightly more than 21 thousand hectares. And the forest reclamation dominates, covering around 14.3 thousand hectares. This does not even compensate for the territories newly allocated for coal mining.

Moreover, statistical data show that there is a steady change in agricultural land downward. Every year, agricultural land decreases by about 30 thousand hectares.

The proportion of the disturbed land in the Kemerovo Region is less than 1%, but the situation is complicated by the fact that most of the region's territory (60%) is mountain formations and the main anthropogenic load is formed on the flat part of the Kuznetsk Basin and the south of the West Siberian Lowland. Thus, almost 17% of the flat part of the Kemerovo region is disturbed land. These lands territorially coincide not only with deposits of hard coal, but also with the region's main agricultural zone, with its highly productive soils [2].

Until recently, the industry of recovery and utilization of large-tonnage waste of the fuel and energy industry, which is practically absent, has led to the continued accumulation of waste: by the beginning of 2017, about 8 billion tons of overburden and waste from coal enrichment processes accumulated in the Kuzbass, including 108.8 million tons and ash and slag waste more than 35.6 million tons. [2]. Overburden and host rocks are usually stored in dumps. Storage of rocks in dumps is accompanied by such negative consequences as air pollution by rock and coal dust, and during self-ignition of rocks, particularly by harmful gases (carbon oxides, sulfur, nitrogen, hydrogen sulfide, phenols), ground and surface waters, and removal of agricultural land from agricultural circulation [3].

The situation is complicated by the fact that the industry of coal mining in the Kuzbass is increasingly conducted by open pit, since it is cheaper. Coal cuts come close to the borders of settlements, barely observing the regulated boundaries of sanitary protection zone. According to modern epidemiological requirements, this is 1,000 m. Social responsibility of business is expressed in the provision of infrastructure services and priorities to residents of villages and small towns affected by coal mining, such as repairing streets, roads, lighting, creating children's sections, providing transport to schoolchildren, and so on. However, this does not help to preserve agriculture and ensure its development.

4. Discussion

One of the options for social assistance for residents of the territories under the influence of the coal industry is resettlement from problem areas, jointly funded from the federal and regional budgets and the budgets of coal companies. Local development programs that provide for resettlement are mainly aimed at relocating residents of mining allotments of abandoned mines. A situational analysis allows to consider the possibility of cross-border cooperation with those regions where agriculture is basic for the economy of the region. For example, the Altai Territory is suffering losses in agricultural production due to negative migration, the losses from which in 2017 alone amounted to 7163 people per year. It is proposed to compensate for the losses through relocating the interested agricultural enterprises and personnel from agricultural areas disturbed by mining workings. In turn, the Altai Territory may cover the needs of the Kemerovo Region for agricultural products.

5. Conclusion

In general, to effectively address the challenges of contemporary agriculture, it is necessary to use a systematic approach, one of the options for which may be trans-regional agreements. The introduction of such social programs will contribute to the achievement of the goals stated in the Doctrine of Food Security of Russia, as well as in the State Program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials and Food for 2013-2020.

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