International Conference on Sustainable Development of Cross-Border Regions: Economic, Social and Security Challenges (ICSDCBR 2019)

# Risks and threats to sustainable development of the border region

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**Abstract**. The article provides a comprehensive assessment of the main risks and threats to the sustainable development of the economy and social sphere of the Altai Krai. The specificity of the manifestation of these threats and risks at different stages of development of the economy of the region and individual territories for the period 1990-2018 has been revealed. The key factors determining the formation of risks and threats were identified.

**Keywords:** risk, threat, sustainable development, socio-economic development, transformation

## 1. Introduction

The key risks and threats to the sustainable socio-economic development of the regions of Russia are determined in their main features by the transformation processes in the economy and the social sphere and the processes of globalization. The risks and threats that were formed back in the 1990s are still being reproduced. They are more acute in many border regions, including the Altai Krai.

## 2. Materials and Methods

In the present study, the assessment of risks and threats to the development of the region was carried out on the basis of the results of a retrospective analysis. This allows not only to assess the depth of the risk and the threat at the moment, but also to reveal their nature, such as leveling the risk situation, the development of risk into a threat, and the acquisition of a risk or threat of a chronic nature.

When identifying risks and threats, special attention is paid to the application of the regulatory method and methods of expert assessments. The following criteria have been adopted for identifying risk and threat: (1) going beyond the threshold (normative) values; (2) a significant lag from the average value in the Russian Federation for positive processes and exceeding the average value for negative processes; (3) negative dynamics over a long period and/or a negative trend versus a positive process in the Russian Federation. In addition to the severity of the manifestation and sustainability of risks and threats over time, their prevalence throughout the region was also taken into account. Such an approach generally corresponds to the methods developed in the analysis of the economic and social security of the region, presented in the works of S. Kazantsev, V. Senchagov, B. Dalal-Clayton, S. Bass, and other Russian and foreign scientists [1-5].



The study is based on the Rosstat data from the early 1990s, the results of a number of public opinion polls and expert assessments. In the course of the study, a set of methods for mathematical-statistical analysis was used: time series, index, balance, groupings, etc.

#### 3. Results

First of all, let's review the risks and threats to economic development. The consequences of the Altai Krai entering the market economy in the 1990s, even against the background of the decline of the economy of the whole country, turned out to be more significant than in Russia. In the course of further development of the region, other negative factors worked out, but there were no equal "transformational" factors in terms of the depth and strength of the impact on the economic and social security of the region's development.

The cumulative influence of these factors, together with numerous disproportions in the development of the region, led to a much deeper and prolonged inhibition of its economy compared with Russia [6]. At the lowest point of the fall, attributable to 1998, Russia's GRP decreased by 12.2% compared with 1994, and of Altai Krai - by 39.4%. As a result, the region restored the level of the 1994 GRP only by 2007, 8 years later than Russia.

The deeper recession of the regional economy at the stage of entry into the market, combined with its slow development in subsequent years, led to an increasing lagging behind Russia with no visible leveling prospects. In 1996, the per capita GRP of the Altai Krai in relation to the average Russian was 62.2%, and in 2016 - 44.6%. This situation is fraught for the region with the loss of positions and the transition from the "moderately developed" regions to the group of "relatively underdeveloped". This is the first and main threat to the development of the region.

Other threats are related to the above, among them:

- De-industrialization of the regional economy, due to the mismatch in market conditions of the economic structure with the possibilities of autonomous development and self-development and entailing the loss of the region's place in the territorial division of labor, a noticeable decline in the role of industry in the Russian economy;
- A limited reproductive potential of the regional economy, due to insufficient financial resources, including budgetary funds, necessary for the implementation of expanded reproduction and normal socio-economic development;
- A lack of proper conditions for the provision of modernization and qualitative changes in the regional economy, associated with an insufficient level of capital accumulation, along with limited opportunities for increasing investment activity;
- In the Altai Krai, a significantly deeper decline in labor productivity compared to Russia during the period of transformational crisis and relatively low growth rates in subsequent years caused a chronic lag and lack of visible prospects for the region to achieve national indicators.

Second, there are socio-demographic and spatial risks, which are based on the analysis of the dynamics and differentiation of incomes of the population of the Altai Krai since the beginning of the 1990s. The three most acute problems that have the character of a chronic threat or challenge with significant negative consequences for the development of the region are highlighted, namely: excessively low incomes of the population relative to the normative and average Russian values; a significant lag in the growth rates of real incomes from similar indicators of Russia; excessive income inequality.

Dynamics of real incomes and wages in 1991-2017 expose the threat in terms of incomes of the population of the Altai Krai. If the data of 2017 were compared to 1990 in Russia, there would be an increase in real incomes of the population, as well as their decline in the region (respectively, 145.8% and 58.7%). A similar picture is with the dynamics of real wages of workers: an increase of 35.3% compared to 1990 in Russia and a drop of 54.6% in the region. Among the challenges to the development of the region that have a relatively lesser threat of the manifestation of problems in the



sphere of incomes, one can single out a significant lag behind Russia in the ratio of per capita incomes to the subsistence minimum (64% in 2017).

Low incomes of the population have a number of negative consequences for the development of the region. First of all, we note the high level of poverty in the region. In 1992-1996, a significant moment is the multidirectional tendencies of the formation of poverty of the population of the country and the border region under study. In Russia, there was a decrease in poverty, while in the Altai Krai its concentration increased, the peak of which was the crisis of 1998-1999, when every second resident of the region was below the poverty line. Despite a significant decline in poverty since the beginning of 2010, it exceeded in 2016 the threshold by 1.8 times and 1.3 times with respect to the average value of this indicator in the Russian Federation.

In the region, in the current decade, the continuing growth of inequality in the incomes of residents, estimated by the decile coefficient, which "goes into the cut" Russian trends in their reduction. The result is a significant reduction in the backlog in inequalities from Russia, reaching a close scale of income differentiation, which increases the likelihood of this challenge becoming a threat of excessive income inequality with significant negative consequences for the development of the region.

Low incomes of the population represent a chronic threat to the full functioning and reproduction of not only the population and the social sphere of the region, but also its economy due to its weak stimulation due to an increase in consumer demand. Low incomes and poverty of residents of the Altai Krai lead to an increase in the migration outflow of its economically active part, especially young people, as well as increased morbidity, alcoholism, reduced reproductive activity, decline in social mood and increased social tension, crime and other deviations [7].

The most important demographic risks of sustainable development of the Altai Krai are the long-term decline in the population, its aging and disparities in resettlement. Since 1995, depopulation processes have been observed in the Altai Krai, the number of men and women, children and people of working age, residents of cities and rural settlements has been decreasing. Currently, the population decline is recorded in 55 rural municipalities (out of 59) and 7 urban districts (out of 9).

The dynamic indicators of the population in the Altai Krai have a certain specificity as compared with the average Russian and the middle regional levels (in the Siberian Federal District). If in the Russian Federation and the Siberian Federal District, the population decline has been observed since 1992, but since 1995 in the Altai Krai. However, the rate of population decline in the region was higher. At the same time, the region is characterized by an increased rate of reduction of the urban population compared to the rural one. In addition, in the last five years, the population decline in the region occurs mainly against the background of its growth in Russia (even with the exception of the "Crimean factor") and Siberia.

In the age structure of the population, there is a steady decline in the number and proportion of the population being in the working age and younger, the growth of absolute and relative indicators of the population in the age above the working age. The indicators characterizing the age composition of the population and its dynamics in the Altai Krai differ somewhat from the average for Russia and Siberia. In the region, the aging of the population (especially in rural areas) and the reduction in the number of children are more intensive. The age structure of the region's population has moved from progressive to regressive.

An analysis of the spatial projection of the main threats to the development of the Altai Krai confirmed the hypothesis of their predominantly general (for the region) character. The specificity of threats to the development of a particular territory of the region is due to the peculiarities of the distribution of productive forces, the character of settlement, the level of concentration of economic activity, etc. But the specificity of the threats inherent in the development of individual territories is of a secondary, subordinate nature in relation to the general regional threats and is outwardly expressed in the degree of their manifestation (acuity).

The most common threats inherent in either all or most of the territorial entities of the region are low investment attractiveness, high depreciation of fixed assets, the presence of outdated technologies hampering the modernization process, disproportions in the development of the agro-industrial



complex, as well as depopulation of the population and its aging, lack of qualified personnel, low incomes. Among the specific threats characteristic of individual territories, we can highlight the absence of employers, poor infrastructure development, high poverty, mass migration of young people, etc. Such threats, as a rule, are most pronounced in the peripheral territories of the region, with relatively low population density and a concentration of economic activity.

An example of the spatial manifestation of threats in the region is the uneven distribution of the population throughout the territory. More than half of the population is concentrated in the cities: Barnaul, Biysk, Rubtsovsk and the surrounding rural municipalities. Rural areas vary considerably in their population density. Its sensity varies from 1.6 people per km² in the border Charysh district, up to 18.3 people in the Pavlovsky district, located near the capital of the region. In eleven districts, the population density is less than 4 people per square km², which indicates a critical situation in these territorial entities with the human resources necessary for their socio-economic development.

## 4. Discussion

The results of the study confirmed a number of theoretical statements that reveal the mechanisms for the development of the regional economy of Russia. In particular, the provision was verified that "In a market economy, the influence of inherited features of development is extremely large and largely determines the "corridor of opportunities" for the development of a particular region" [8, p. 27].

Increasing inequality between different territorial types of regions (resource-extracting and processing, central and peripheral, internal and border) has led to an exacerbation of risks and threats to the sustainable development of peripheral regions, much of which are border regions.

The frontier position of the Altai Krai, contrary to the allegations in Regional Science [9], did not play a decisive positive role in its socio-economic development due to the rupture of economic ties with the former Soviet republics and due to the fact that the region, as a frontier region, was out of the way trade flows.

The aggravation, or leveling of risks and threats to the sustainable development of the border region, is determined by the influence of two key factors – (a) peripherality and (b) proximity of the main trade routes.

# 5. Conclusion

After the collapse of the Soviet Union, the Altai Krai suffered from the loss of traditional economic ties, and how the border region turned out to be on the "outskirts" of Russia, outside the main trade flows. Over the past quarter century, a complex of economic, socio-demographic, and spatial risks and threats to its sustainable development has been formed in the region, most of which are chronic. This was manifested in the reduction of positions in the ranking of the country and threatens the transition from the moderately developed regions to the relatively underdeveloped.

Activation of the state policy implemented in the region in the last decade leads to certain positive results, including an increase in agricultural production, an increase in labor productivity, an increase in life expectancy and a reduction in mortality. However, most of these achievements are episodic. They are unevenly distributed in space and do not yet provide a fundamental change in negative socioeconomic trends; therefore, they do not create a reliable basis for the region's sustainable development.

# 6. Acknowledgments

The research was carried out with the research work of the Institute of Economics and Industrial Engineering of the Siberian Branch of the Russian Academy of Sciences, project XI.174.1.1 "Economy of Siberia and its regions with external and internal challenges and threats: methods, trends, forecasts," № AAA-A17-117022250133-9.

#### References

[1] Kazantsev S V 2014 Economic security of the Russian regions (Novosibirsk, Russia: Institute of



- Economics and Industrial Engineering of the Siberian Branch of the Russian Academy of Sciences)
- [2] Senchagov V K, and Solovyev A I 2015 Global risks and economic security of Russia: management problems *Modern Management Technologies* **10**(58) pp 19-27
- [3] Senchagov V K, and Mityakov S N 2012 Indicators of sustainable development of the regions of the Russian Federation in *Problems of sustainability of the functioning of countries and regions in conditions of crises and disasters of modern civilization: Proceedings of the XVII International Scientific and Practical Conference* (Moscow, Russia: All-Russian Research Institute for Civil Defense and Emergencies of the Russian Emergencies Ministry)
- [4] Dalal-Clayton B and Bass S 2002 Sustainable development strategies: a resource book. (Brussels, UK: UNDP and OECD)
- [5] De M, Carlos L, and Adib A 2007 Sustainable development and the territorial approach: identities and typologies (COMUNICA)
- [6] Trotskovsky A Ed. 2017 *Transformational processes and the formation of competitive advantages in the Altai Krai* (Novosibirsk, Russia: Institute of Economics and Industrial Engineering of the Siberian Branch of the Russian Academy of Sciences)
- [7] Sergienko A Ed. 2014 Poverty of rural Russia in the context of the modernization of the economy: the processes and mechanisms of formation and overcoming (collective monograph) (AZBUKA)
- [8] Zubarevich N V 2005 Russian regions: in which economic space we live (Moscow, Russia: Independent Social Policy Institute)
- [9] Granberg A 2003 Basics of the regional economy (Moscow, Russia: Higher School of Economics)