

УДК 332.1

## **Current Condition and Prospects of the Spatial Development of the Northern Areas of The Krasnoyarsk Territory**

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Received 24.05.2019, received in revised form 04.06.2019, accepted 07.06.2019

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*The article studies the peculiarities of spatial peculiarities of the northern areas of the Krasnoyarsk Territory, using three approaches: latitudinal (north-south), longitudinal (west-east) and the development type (intensive, extensive or nature preserving). Each of the approaches characterizes certain aspects of the regional policy aimed at the northern territories. The analysis reveals the main tendencies and trends in the prospective development of the northern areas, and facilitates formulation of the issues that require a regulatory-legal and organizational-administerial consideration. It is concluded that there is a need for a differentiated regional policy concerning separate zones of the northern territories and also on expediency of consideration of the northern macroregion as an independent strategic planning subject at the regional level.*

*Keywords: Northern areas of the Krasnoyarsk Territory, natural and resource potential, latitudinal and longitudinal zoning, intensive and extensive development zones, specially protected natural areas, territory of traditional natural resource use, regional policy, spatial development.*

*The research was carried out with the plan of research work of IEIE SB RAS, project XI.174.1.1. "Economy of Siberia and its regions with external and internal challenges and threats: methods, trends, forecasts", No. AAAA-A17-117022250133-9.*

*Research area: economic science.*

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Citation: Shishatsky, N.G., Bryukhanova, E.A. (2019). Current condition and prospects of the spatial development of the northern areas of the Krasnoyarsk Territory. J. Sib. Fed. Univ. Humanit. soc. sci., 12(6), 1088–1105. DOI: 10.17516/1997-1370-0442.

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## **Problem setting**

The northern areas of the Krasnoyarsk Territory are currently not an integrated and solid object of socioeconomic administration. Along with that, a theoretically justified status and role of the North as a factor of sustainable socioeconomic development of the Krasnoyarsk Territory, requires a mandatory and unbiased assessment of the spatial condition and the development degree of some certain parts of this enormous territorial entity.

The width of the northern territories, diversity of accommodation conditions and business styles determine the selection of the current research object, that is analysis of differentiation and assessment of the regional northern areas' spatial development factors for the selection of the optimal strategy and specification of the maintained territorial policy principles. The research is up-to-date due to the poor conceptual framework of the said issues and the absence of any generalizing works for the northern areas as a whole and integrated entity with its own spatial structure and system unity.

## **Northern areas' spatial structure research specificity**

The spatial development of Russia, including its northern territories, has been studied by numerous Russian specialists in the sphere of economic geography and regional economy.

The work by A.G. Granberg (Granberg, 1985) played an important role in the spatial development analysis based on the macroeconomic zoning of the territory of Siberia into the Far North, Near North, and South, which complemented the major economic zone classification to enhance the understanding of the main patterns of the territorial economic proportions.

The logical diagram for classification of the intraregional administrative and territorial entities on the basis of a wide set of spatial symmetry factors was proposed in the works published by the Territorial Industry Complex sector of the Institute of Economics and Industrial Engineering SB RAS under the supervision of M. K. Bandman (Bandman et al., 2000).

V.N. Lazhentsev suggested a three-area projection of the spatial development of the North: circumpolar, latitudinal and longitudinal (Lazhentsev, 2011).

A.N. Piliarov promoted the idea of forming a circumpolar macroeconomic region as a centre of cooperation for the Arctic regions of Russia and the world (Piliarov, 2010).

Studying the asymmetry of the Russian territories, A.I. Treyvish marks out four geographic axes (or peculiarities of territorial structure):

- 1) north-south differences (latitudinal zoning);

- 2) west-east axis (west-east asymmetry);
- 3) centre-periphery contrasts;
- 4) difference between “Russian” and “non-Russian” districts (Bandman, 1990).

L.A. Bezrukov modified the approach of A.I. Treyvish with regard to the specificity of Siberian macroregion, and complemented the main geographic spatial structure analysis with the following five tendencies:

- 1) latitudinal zoning (south-north gradient),
- 2) longitudinal west-east asymmetry (west-east gradient),
- 3) gravitation toward the main traffic arteries (traffic arteries — hard-to-reach areas gradient),
- 4) localization of the industrial potential around the territorial industry complex (industrial complex areal — other areas),
- 5) concentration around major cities and agglomerations (centre-periphery gradient) (Bezrukov, 2014).

This approach appears to be the most adequate to the objectives and tasks of the analysis of the spatial structure of the northern areas of the Krasnoyarsk Territory. However, for the purposes of the present paper the number of geographic axes was reduced to three, by uniting axes 3, 4, and 5 into one. The integrated geographic axis is related to the spatial differentiation analysis based on the territory development type: intensive, extensive, and nature preserving. As a result, our systematic analysis of the Krasnoyarsk Territory northern areas development includes the following three aspects:

- latitudinal zoning (south-north gradient),
- longitudinal west-east asymmetry (west-east gradient),
- territory development type (intensive — extensive — nature preserving gradient).

### **Analysis of the Krasnoyarsk Territory northern Areas development in the context of latitudinal zones**

In the present research, northern latitudinal zones are outlined on the basis of two official documents: Arctic Territories Structure<sup>1</sup> and the List of the Areas of the Far North and Equated Localities<sup>2</sup>.

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<sup>1</sup> Decree of the President of the Russian Federation No. 296 “On the land domain of the Arctic zone of the Russian Federation” dated 02.05.2014 [electronic source]. Available at: <http://kremlin.ru/acts/bank/38377> (accessed on 6.05.2019).

<sup>2</sup> List of the Areas of the Far North and Equated Localities (on the municipal structure of the entities of the Russian Federation) as of January 1, 2018 [electronic source]. Available at: [http://www.gks.ru/bgd/regl/b18\\_22/IssWWW.exe/Stg/00-01.doc](http://www.gks.ru/bgd/regl/b18_22/IssWWW.exe/Stg/00-01.doc) (accessed on 6.05.2019).

Combination of the lists makes up three latitudinal northern areas of the Krasnoyarsk Territory:

- Arctic zone (Taymyr Dolgano-Nenets and Turukhansk Districts, the municipality of Norilsk);
- Far (Extreme) North zone (Severo-Yeniseisk and Evenkia Districts);
- Near North zone (Boguchany, Kezhemsky, Motygin, Yeniseisk Districts and the municipalities of Lesosibirsk and Yeniseisk).

The main factor for differentiation of the territorial characteristics in the context of the latitudinal zones is, first of all, gradually declining level of natural comfort from the positive environment for accommodation and economic activities of the main populated areas (central and southern districts of the Krasnoyarsk Territory) to the north.

Global climate change and warming reduce the discomfort and change the climatic characteristics of the latitudinal zones. Table 1 shows the correspondence between the natural discomfort areas and the latitudinal zones of the Russian North for the periods of 1961–1990, 2001–2010, and the forecast for 2046–2055.

Table 2 presents the data on the territorial structure of the main indices broken by the latitudinal zones of the northern areas of the Krasnoyarsk Territory and their changes in the period of 2007–2017.

**Arctic latitudinal zone** occupies the major part of the northern areas of the Krasnoyarsk Territory (51.7 %); 51.9 % of the regional population is concentrated here. Logistic and economic peg to the Yenisei — Northern Sea Route transport corridor and the Arctic Ocean coast is very typical for this zone. The distinctive feature of the territorial economy organization in the area is localization of the industries around

Table 1. Correspondence of the latitudinal zones to the natural discomfort zones (in % of the territory) (Bokuchava et al., 2018)

	Periods											
	1961–1990				2001–2010				2046–2055 (forecast)			
	Discomfort zones				Discomfort zones				Discomfort zones			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Arctic zone	65	24	7	4	41	34	17	8	30	42	19	9
Far (Extreme) North	33	32	25	10	4	38	40	18	4	31	28	37
Near North	1	41	52	6	1	13	76	10	1	9	87	3

Note: I — absolutely adverse natural discomfort zone, II — very adverse, III — adverse, IV — conventionally adverse.

Table 2. Territorial structure of the main indices in the context of the northern areas of the Krasnoyarsk Territory in the years 2007 and 2017

Indices	Years	Northern areas of the Krasnoyarsk Territory, total,%	including			Share of northern areas in the Krasnoyarsk Territory indices,%
			Arctic zone	Far (Extreme) North	Near North	
Resident population	2007	100.0	53.2	5.5	41.3	17.3
	2017	100.0	51.9	6.0	42.1	15.3
Area	2007	100.0	51.7	38.2	10.1	89.6
	2017					
Estimated cost of the mineral, raw material, fuel and energy industry production in the current global prices	2007	100.0	91.2	7.7	1.1	n/a
	2017	100.0	71.8	19.5	8.7	n/a

Note: based on the State Report “On the condition of environment in the Krasnoyarsk Territory” for the year 2017 and the Municipality Indices Database.

several natural resources’ concentration points, the sources of better living standards and more advantageous economic and geographic position.

The dominating number of the Arctic areas of the Krasnoyarsk Territory cannot be accessed by land all year round, being merely peripheral territories with extreme natural and climatic conditions, mostly extensive economic activities, scarce population and huge unpopulated areas. If the Norilsk-Dudinka agglomeration of the Arctic area (occupying 4.5 thousand sq.km., population 201.7 thousand people) is not taken into account, the population density in the rest of the Arctic area of the Krasnoyarsk Territory would be under 0.025 pop./km<sup>2</sup>.

An important distinctive feature of the **Far (Extreme) North of the Krasnoyarsk Territory** is its location in relation to the transport routes. Despite its “central position”, the Severo-Yeniseisk and Evenkia Districts are out of the way of both federal and regional transport corridors.

The low transport accessibility impacts the industrial structure of the region, limiting the production tonnage and complicating the economic activity of the population.

The adverse natural and climatic conditions of the zone and its low transport accessibility explain the domination of the rotational employment system (the population of rotation employees reaches 30 % of the resident population) and the absence of large settlements with resident population.

The Far (Extreme) Northern area is a little inferior to the Arctic zone of the Krasnoyarsk Territory in the area (approximately by 1/3), but the resident population is much less. According to the available statistics, by the beginning of 2007, only 5.5 % of the total Northern areas' population was resident in the Far (Extreme) North zone (9.6 times less compared to the Arctic zone of the Krasnoyarsk Territory).

**Near North zone of the Krasnoyarsk Territory** is the most dynamically developing: in the past several years, Boguchany Energy Industry Complex consisting of Boguchany Dam and the first stage of Boguchany Aluminium Smelter (Boguchany and Kezhemsky Districts) were launched; Novoangarsk Process Plant and Kirgiteyskoe Magnesite Deposit (Motygino District) have been developing.

The competitive advantages of the zone are: relevant potential of the federal-level raw materials and mineral deposits, including ferrous and non-ferrous metal ores and forest resources. The “Comprehensive Development of the Lower Angara” investment project gave start to the development of the road and power infrastructure, which created another significant competitive advantage for the further progress. Nevertheless, the infrastructure deficit holds back the industrial development and investment project implementation in a number of territories.

The zone enjoys the most positive natural and climatic conditions among the rest of the northern territories, a relatively advantageous economic and geographic position (proximity to the economic activity centres of the central and southern districts of the Krasnoyarsk Territory and Siberia), all-season (all-year-round) transport access to the Trans-Siberian railway in the eastern and western parts of the macroregion.

Despite all that, though being the highest among the other latitudinal northern zones of the Krasnoyarsk Territory, the population density is noticeably inferior to that of the central and southern parts of the Territory: 0.86 pop./km<sup>2</sup> (Near North zone) and 9.8 pop./km<sup>2</sup>. (central and southern Districts of the Territory) correspondingly.

### **Analysis of the longitudinal west-east asymmetry of the northern areas of the Krasnoyarsk Territory**

The longitudinal asymmetry expresses the common tendency of decline in the development and population intensiveness eastward, which is historically connected to the gradual fade of the colonization “waves” coming from the European part of the country (Bezrukov, 2014).

For the northern areas of the Krasnoyarsk Territory, longitudinal asymmetry is caused by both general circumstances (in the west, the northern areas of the Territory

border on more economically developed countries than in the east), and some additional reasons, like the absence of any water and land transport routes in the meridional direction in the north.

The west-east asymmetry is the most distinctive in the Arctic zone, and less vivid in the Near North and Extreme North areas (Table 3). At all that, the reasons for the relative equalization are different: in the Extreme North, it is underdevelopment of the western territories, and in the Near North is it relatively high level

The west-east asymmetry, caused by the poor transport access to the eastern districts compared to the western ones, causes gradual growth of product prices and the expenses related to economic activities and life necessities. It means that this factor needs to be considered during planning the development prospects, and that a set of actions aimed at smoothening the asymmetry needs to be developed. In this regard, the most reasonable one would be the development of transport routes and communications in the meridional directions.

Table 3. Characteristics of the longitudinal west-east asymmetry of the Northern areas of the Krasnoyarsk Territory

	Northern areas of the Krasnoyarsk Territory	including	
		western part	eastern part
Resident population as of January 1, 2018, thousand people	439.3	354.4	84.9
including			
Arctic zone	228.0	223.4	4.6
Far (Extreme) North	26.2	12.1	14.1
Near North	185.1	118.9	66.2
Population density, pop./km <sup>2</sup>	0.21	0.34	0.08
Including			
Arctic zone	0.21	0.33	0.01
Far (Extreme) North	0.03	0.05	0.02
Near North	0.86	0.95	0.75

Note: the western part includes: in the Arctic zone: Norilsk, Turukhansk District, Taymyr Dolgano-Nenets District without Khatanga rural locality; in the Far (Extreme) North zone: Severo-Yeniseisk District and rural localities of the Evenkia District to the west from meridian 96° (Tutonchany, Poligus, Kuzmovka, Burny, Sulomay); in the Near North zone: Motygino and Yeniseisk Districts, Lesosibirsk and Yeniseisk; the eastern part includes: in the Arctic zone: Khatanga rural locality of the Taymyr Dolgano-Nenets District in the Far (Extreme) North zone: rural localities of the Evenkia Districts to the east from meridian 96°, in the Near North zone: Boguchany and Kezhemsky Districts.

## **Analysis of the spatial development of the northern areas of the Krasnoyarsk Territory considering their economic use**

From the economic use point of view, the northern areas of the Krasnoyarsk Territory can be classified into the following zones:

- Intensive development with maximum allowable transformation of the environment: transport, engineering and infrastructure facilities, industrial hubs, urbanized centres;
- Extensive development and local transportation of the environment: rural populated localities, including the compact residence areas of the small-numbered indigenous peoples of the North;
- Restricted development and maximum conservation of the environment: recreation zones, special protected territories, protected forestry areas etc.

**Intensive development zones** occupy 0.8–1.0 % of the northern areas, concentrated locally (mostly in the territories of the Severo-Yeniseisk, and Evenkia Districts), or around the industrial hubs and districts: Messoyakha, Vankor (including Igarka), Kodinsk, Boguchany-Taezhinsk, Motyginno-Razdolinsk, Novoangarsk, Norilsk-Dudinka and Lesosibirsk Districts (together with Yeniseisk).

The intensive industrial development zones are the concentration spots for the majority of resident population (77.6 %), power generation (97.9 % of the rated electric and 79.4 % heat energy), transport (99 %). The technogenic load on nature is very high in the areas.

In the future, new creation of intensive development zones is planned: Dixon, Payakha (Ust'-Yeniseisk), Khatanga, Turukhansk, Kuyumba, Baykit, Vanavara industrial hubs, as well as local centres along the main transportation routes and settlement corridors on the Yenisei-Angara axis, in the railway and motorway development areas etc.

Considering the high technogenic pressure on nature and the costs of the industrial hub maintenance, such territory zoning shall ensure the rational use of the territorial resources to provide the opportunity of making up united transportation and engineering communication networks, and shall be based on the use of the best available technologies, thorough environmental and ethnological researches.

One of the key problems of the intensive development of the Northern territories is the question of attracting and retaining labour resources. The expansion of rotational employment is a natural process of the socioeconomic development of the Northern areas of the Krasnoyarsk Territory.



However, rotational employment pattern does not fit all kinds of industrial and economic activities. Moreover, the rotational employment pattern has serious restrictions caused by the adverse impact it makes on the lifestyle and health of people.

Another problem is spontaneous growth of the rotation camps with the weakening governmental control and poor control over the work and life of the rotation employees. The domestic rules established within the rotation camps often contradict the constitutional provisions and regulations acting in the Russian Federation (Silin, 2015).

All that requires application of a comprehensive approach to ensure the rational population distribution between the resident settlements and the rotation camps. It appears acceptable and reasonable to allow a slight decline in the number of the resident population as they get replaced with rotation workers, but it should be considered together with all the aspects and factors of the regional (and ethnical) socioeconomic effectiveness.

The existing settlements with resident population and the common basic elements of infrastructure shall be considered as a result of the previous large investments made by the government, and, therefore, as a real asset and tool for the governmental involvement in the economic development of the Northern and Arctic territories (Fauzer, 2013).

In its turn, the institutional infrastructure belonging to the industrial corporations working in the underdeveloped areas of the Arctic and the North, may and should be integrated and used (on the win-win basis), considering the task of comprehensive development of the territories and their resident population.

**Extensive development and local environment transportation zones** are the absolutely dominating type of areas in the northern districts of the Krasnoyarsk Territory. They cover over 93–93.5 % of the total area of the territory.

As of 01.01.2018, the northern districts of the Krasnoyarsk Territory comprised 217 rural localities with the population of 116.6 thousand people (26.6 % of the total resident population of the northern areas). The dominating majority of the rural population (almost 2/3) is concentrated in the Near North; the population shares of the Arctic and the Far (Extreme) North are 18.5 % and 16.7 % of the total rural population of the northern areas of the Krasnoyarsk Territory correspondingly.

With the improving natural comfort of the habitat, the average population of the rural localities increases (589–600 people in the Far (Extreme) and Near North compared to 373 people in the Arctic zone); on the opposite, the share of abandoned settlements decreases (from 12.1 % in the Arctic zone to 5.6–6.1 % in the Far (Extreme) and Near North zones).

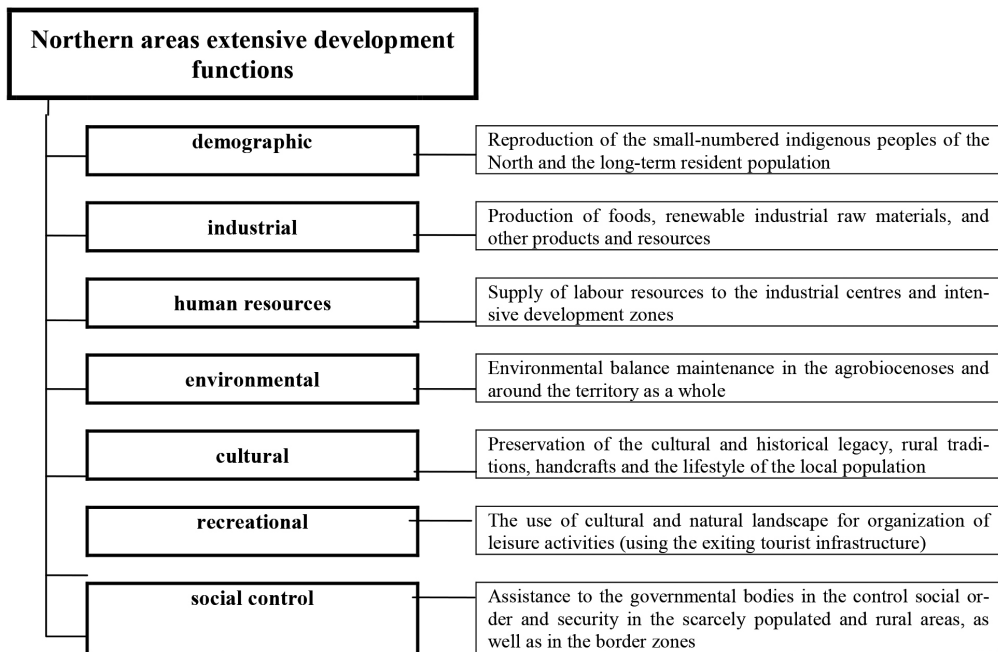


Fig. 1. Functions of the extensive development zones of the Northern areas of the Krasnoyarsk Territory

Despite their peripheral role, the extensive development and local environment transformation zones are the basic (fundamental) elements of the spatial development system of the Northern areas of the Krasnoyarsk Territory, performing a number of important functions (Fig. 1).

The northern rural areas of the Krasnoyarsk Territory have a rich resource potential, capable of providing sustainable socioeconomic development, effective employment, high living standards for the rural population in the future.

The northern areas of the Krasnoyarsk Territory provide a sufficient fodder base for the **domestic reindeer breeding** development. The reindeer pastures (124.3 million ha) have the capacity of feeding 560 thousand reindeer. In the period of 2001–2017, the domestic reindeer stock grew by 2.5 times, counting 115 thousand heads as of the beginning of 2018, constituting around 6 % of the all-Russian and 5 % of the global stock of the domesticated reindeer<sup>1</sup>.

<sup>1</sup> On establishment of the state program of the Krasnoyarsk Territory “Preservation and development of traditional lifestyle and economic activities of the small-numbered indigenous peoples” (Decree of the Government of the Krasnoyarsk Territory No. 520-п dated September 30, 2013, with amendments as of March 5, 2019) [electronic source]. Available at: <http://docs.cntd.ru/document/465805631> (accessed on 6.05.2019).

**The Taymyr wild reindeer population** is the largest in the world, constituting the major part of the entire wild reindeer population of the Eurasian continent (Maklakov et al., 2016). According to the registration data of the Extreme North Agricultural Research Institute and CircumArctic Rangifer Monitoring and Assessment (CARMA) Network, at the turn of the 20<sup>th</sup> century the population reached 1 million. At the present time, the estimations provide a smaller number, 700–800 thousand heads. It allows killing up to 50–60 thousand reindeer per year with no harm to the herd reproduction (2500–3000 tons of carcass weight).

**Fishery importance** is typical for almost all surface water bodies habitable for fish and other aquatic organisms: the Yenisei, Khatanga, Pyasina river basins, Taymyr lake, Ust-Khantaika reservoir. The whitefish, like muksun, omul, vendace, smelt, nelma, constituting around 80–90 % of the total resources, are of the greatest commercial value. The share of valuable species, sturgeons and salmon, is relatively small: 3–5 %.

In the stock and quality, **the forest resources** of the Krasnoyarsk Territory north taiga zone (dominantly, the Near North districts) are the best in Russia and are fairly considered as a basis for establishment of a competitive forest industry complex here. In the future, it appears reasonable to improve the access to the resources for the forest owners, to expand the forest development activities and to enhance the use of non-timber resources of the forest.

The northern territories provide rich opportunities for the development of **cultural and educational, scientific, adventure and eco-tourism**.

Due to its potential, in the future the Krasnoyarsk Territory northern zone may become the platform for development of various efficient economic activities (Fig. 2).

Currently, the economic condition of such activities, especially in the peripheral (remote) rural areas, is extremely unstable, non-marketable (natural) and unproductive.

To get over the crisis and to head over sustainability, it is necessary to:

- update the production process, provide advanced training and education of the workers, implement the latest technologies;
- enhance financial support;
- raise the workers' income;
- eliminate the monopoly of the procurement, intermediary and processing structures;
- develop multifunctional facilities to integrate agriculture, hunting and fishery activities, forest management and tourism economies;

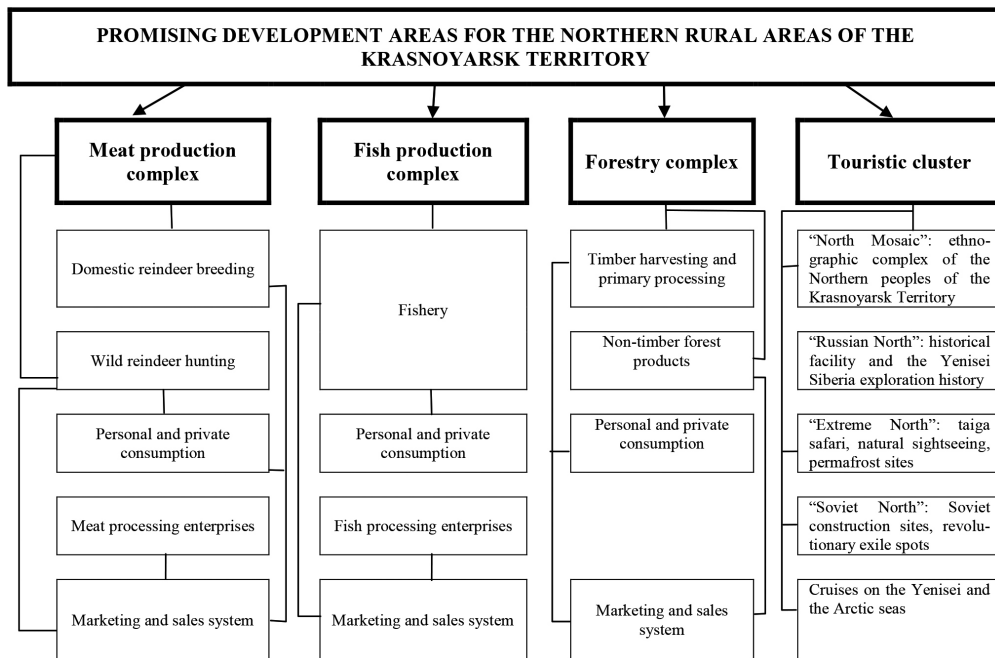


Fig. 2. Promising development areas of the northern rural areas of the Krasnoyarsk Territory

– create indicative planning and northern rural economy forecasting systems at the regional level.

From the socioeconomic development potential point of view, rural settlements of the northern areas of the Krasnoyarsk Territory can be divided into three categories:

- 1) promising ones, capable of healthy development within the created competitive agricultural, forestry and tourism market complexes;
- 2) sustainable, medium-sized and large settlements with a relatively stable resident population, that do not completely fit in the market structures, and need to sustain their role as the ethnosocial and ethnocultural development centres;
- 3) small settlements of little promise with continuously reducing population.

All categories of settlements are in need for governmental (regional) support, but such support shall be differentiated with regard to the promising development tasks of each individual settlement or settlement cluster (Table 4).

It is important to remark, that any attempt of commercializing the traditional economic activities of the northern population (small-numbered indigenous peoples of the North and old-timers) shall consider the limits such task will inevitably face in the northern economy.

According to our assessment, the category of promising rural settlements may encompass around 45 % of the population of the extensive northern territory

Table 4. Trends of regional sustainability support provided to the northern rural settlements of the northern areas of the Krasnoyarsk Territory

Type of support	Settlement categories		
	promising	sustainable	of little promise
Organizational, investment and taxation support of economic projects in the spheres of agriculture, forestry, tourism etc.	+		
Infrastructure development and improvement	+	+	+
Subsidizing high living costs	+	+	+
Rehousing (migration) or settlement liquidation programs			+

development zone. Therefore, the sustainable settlements comprise around 50 % of it, and 5 % belong to the little promise category.

The provided figures are indicative and need to be specified (in the context of districts and rural settlements) on the basis of comprehensive interdisciplinary research, considering all the economic and social development factors.

**The limited development and maximum nature preservation zones** include: recreation zones, specially protected natural areas (SPNA), protected forest zones etc. The major role is played by SPNAs, being independent environmental and economic management subjects within the sustainable development and rational nature use system.

As of January 1, 2018, in the North of the Krasnoyarsk Territory there are 32 specially protected areas, including 8 federal SPNAs<sup>1</sup>, 20 regional SPNAs, 4 local SPNAs covering the total area of 12,275 thousand ha, constituting 5.8 % of the entire area of the northern areas of the Krasnoyarsk Territory.

The largest SPNAs are located in the Taymyr Dolgano-Nenets District — 8,901.7 thousand ha (10.1 % of the total district area), in Evenkia District — 1,428.4 thousand ha (1.9 %), Turukhansk District — 1,321.9 thousand ha (6.3 %). In two municipalities (Severo-Yeniseisk and Kezhemsky) have no SPNAs.

In order to develop the SPNA system, it is planned to create new regional SPNA in the northern areas of the Territory (state natural reserves of the Vorogovskie Isles,

<sup>1</sup> 2 state biosphere reserves (Taymyr, Central Siberian Reserves), 3 state nature reserves (Grand Arctic Reserve, Putorana, Tungus Reserves), 3 state nature sanctuaries (Purinsky, Eloguysky, Severozemelsky).

Makovskoe Lake, Kangotovskie Creeks in Turukhansk District; Symsky in Yeniseisk District etc.), to specify the area and category of the established SPNAs<sup>1</sup>.

The step-by-step expansion of the regional SPNA network will create a sustainable system of nature reserves (environmental frame of the region) to compensate the existing and potential consequences of the technogenic impact on the environment.

At the moment, prerequisites for the development of Territories of Traditional Natural Resource Use (TTNRU) areas in the Krasnoyarsk Territory are formulated<sup>2</sup>.

Considering their legal status peculiarities (according to the Federal Law No. 49-FZ “On the areas of traditional nature use by small-numbered indigenous peoples of the North, Siberia, and the Far East of the Russian Federation” dated 07.05.2001 and the Land Code of the Russian Federation), the TTNRUs areas shall be classified as federal, regional, and local SPNAs. However, the TTNRUs area establishment practice and the currently developed legislative solutions do not satisfy this requirement.

According to the opinion expressed by the regional associations of the small-numbered indigenous peoples of the North, Siberia, and the Far East of the Russian Federation, operating in the territory of the Siberian Federal Okrug, the compliance practices of TTNRU area establishment causes the legal impairment of the small-numbered indigenous peoples and breaches their constitutional rights to traditional nature use and original habitat protection<sup>3</sup>.

Many natural resources used by the small-numbered indigenous peoples do not have a market value for being non-marketable, consumed by locals to satisfy their needs (e. g. some berries, fish, wild herbs etc.). For the comprehensive assessment of natural resources for evaluation of the resource productivity of a territory, the development of natural capital economic assessment standards to estimate the harmful impact is required.

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<sup>1</sup> Decree of the Government of the Krasnoyarsk Territory No. 784-p “On establishment of the development concept and location of the specially protected natural territories of the regional significance for the period to the end of 2030” dated November 14, 2017 [electronic source]. Available at: <http://docs.cntd.ru/document/450372748> (accessed on 6.05.2019).

<sup>2</sup> Decree of the Government of the Krasnoyarsk Territory No. 421-п “On establishment of procedure for establishment of traditional nature use territories of the small-numbered indigenous peoples of the Russian Federation, resident in the Krasnoyarsk Territory, of the krai (regional) significance, and the list of documents required for issuing the decree on establishment of a traditional nature use territory of the small-numbered indigenous peoples of the Russian Federation, resident in the Krasnoyarsk Territory of the krai (regional) significance” [electronic source]. Available at: <http://docs.cntd.ru/document/450289099> (accessed on 6.05.2019).

<sup>3</sup> Recommendations of the Round Table on the establishment of traditional nature use territories of small-numbered indigenous peoples of the North, Siberia and the Far East of the Russian Federation (August 11, 2017, Krasnoyarsk) [electronic source]. Available at: [http://www.narodsevera.ru/news/reports/?news\\_id=3858](http://www.narodsevera.ru/news/reports/?news_id=3858) (accessed on 6.05.2019).

The pattern for distribution of the funds received as compensation of the damage caused to the small-numbered indigenous peoples also needs improvement. To our mind, it would be fair (and feasible) to compensate the damage and distribute the benefits of an industrial facility operating in the traditional nature use area to all the local residents, who may be not directly related to the project implementation, but whose interests may be affected in any way: that includes the tribal communities, civil servants, pensioners etc. (Afanas'ev et al., 2017). Such payments may be effected both under an agreement concluded between the interested parties and through the socioeconomic development funds established in the territories.

The mentioned issues require further economic and legal research.

### **Conclusion**

The role played by the northern areas in the spatial development of the Krasnoyarsk Territory and the country as a whole is ambiguous and controversial. On one hand, their powerful natural, territorial and economic potential could serve as a basis for sustainable development, but on the other hand, the extreme conditions for life and industry complicate all social and economic processes. The northern and Arctic territories develop in a narrow “corridor of opportunities” limited by the intrinsic barriers and factors of development, the major of them being:

- abundance of sought-for natural resources (minerals, fuel and energy, forest etc.), concentrated in a relatively small number of areas;
- continental geographic location, increasing the transport costs, remoteness from socioeconomically developed regions of the country and the world;
- underdeveloped logistic, industrial, and social infrastructure;
- absence of urban agglomerations to perform the basic support functions in the population distribution, capable of generating technological, social and other innovations;
- scarce settlement network and low population density, slowing down the spread of innovations;
- stable depopulation caused by the policy of “pressing” the unwanted people away from the north;
- reducing human capital (education, health, labour migration, mobility and adaptivity of population);
- poor population mobility due to low income, unavailability of transport, growing temporary labour migration and rotation employment system.

The specificity of the northern areas, their place and role in the socioeconomic development of the Krasnoyarsk Territory determine the need for zoning the macroregion off as an independent strategic planning entity at the regional level.

The development and implementation of the Development Strategy for the Northern Areas of the Krasnoyarsk Territory based on the sustainable development principles (i. e. the balance of public and private interests, provided that the stricter environmental standards are implemented and the most efficient energy-saving and environmentally-friendly technologies are used), implementation of new projects in the mineral resource, transport and power sectors, the use of the northern resources as a basis for hi-tech and managerial innovation development, provision of high living standards of the population shall convert the macroregion development into an impetus for modernization of the entire economy of the Krasnoyarsk Territory, that would strengthen its leading position in the Russian North and Arctic.

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## **Современное состояние и перспективы пространственного развития северных территорий Красноярского края**

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*В статье рассмотрены особенности пространственного развития северных территорий Красноярского края с использованием трех подходов: широтного (север-юг), меридионального (запад-восток) и по типу освоения (интенсивное-экстенсивное-природоохранное). Каждый из этих подходов актуализирует определенные аспекты региональной политики по отношению к северным территориям. Анализ позволил выявить основные тенденции и направления перспективного развития северных территорий, сформулировать вопросы, требующие нормативно-правового и организационно-управленческого рассмотрения. Сделаны выводы о необходимости проведения дифференцированной региональной политики в отношении отдельных зон северных территорий, а также о целесообразности выделения северного макрорегиона в самостоятельный субъект стратегического планирования на краевом уровне.*

*Ключевые слова: северные территории Красноярского края, природно-ресурсный потенциал, широтное и меридиональное зонирование, зоны интенсивного и экстенсивного освоения, особо охраняемые природные территории, территории традиционного природопользования, региональная политика, пространственное развитие.*

*Статья подготовлена по плану НИР ИЭОПП СО РАН, проект XI.174.1.1. «Экономика Сибири и ее регионов в условиях внешних и внутренних вызовов и угроз: методология, тенденции, прогнозы», № АААА-А17-117022250133-9.*

*Научная специальность: 08.00.00 — экономические науки.*

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