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Problems and Prospects for Sustainable Development of the Arctic Local Economies: The Case of the Shuryshkarskiy District

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Abstract. The strategic geopolitical importance of the Arctic and its environmental vulnerability require special attention to the sustainability of the Arctic local economies. In this study, we have proposed a system of sustainable development goals (SDGs) and indicators, adapted for the Arctic local economy. The testing of the proposed methodology on the example of Shuryshkarskiy district (Yamalo-Nenets Autonomous Okrug, Russia) allowed analyzing the problems and prospects of development of the local economy in the context of SDGs. The analysis reveals a significant gap between the current state, transformation trends of the Shuryshkarskiy district and the required state, the vector of its sustainable development, in accordance with the SDGs and the Strategy for the Development of the Arctic Zone of the Russian Federation. The proposed analytical methodology has high potential for the analysis of problems and prospects for the sustainable development of Arctic local economies. However, the system of local SDGs and indicators, the data collection system and the structure of municipal databases and municipal management processes require their correlation and integration.

Keywords: *Arctic, sustainable development, local economies, Arctic settlement*

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Introduction

The relationship between the vitality of local economies and sustainable development goals (SDGs) is the mainstream of current research [1, Phillips R., Seifer B., Antczak E.; 2, Shuman

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M.H.; 3, Weizsäcker E.U. von, Wijkman A.]. In particular, M. Shuman believes that the traditional practice of economic development has become ineffective in the context of the SDGs and offers an alternative approach, in which a new generation of special types of business is developing, providing perspective viability of local communities. Through the analysis of case studies, researchers demonstrate how dynamic, healthy and sustainable local economy flourishes through the introduction of innovative economic and social practices [4, Hallsmith G et al.] and the development of prospective viability potential of local communities as a whole [1]. There are very few studies that systematize historical experience and consider the prospects for the development of sustainable local economies and resilient rural communities in Russia. The most comprehensive historical study of the development of local economies in Russia was led by G. Tyurin. Analysis of various historical periods in Russia and other countries, where the economic development was mainly due to the growth of local economies, revealed the great importance of local small-scale production, public support and mutual assistance, the activity of the local community, involvement in self-government processes, balance between economic independence and effective participation in the global economy of local communities [5, Tyurin G., Tyurin V.]. There is also a lack of research on the development of local economies in sparsely populated hard-to-reach areas, especially in small Arctic settlements, which differ greatly in environmental, cultural and economic conditions [6, Pilyasov A.N., Polyachenko A.E.].

Trends in the development of local Arctic communities do not always correspond to the economic development of the Arctic as a whole. Thus, according to the Business Index North report, which includes an analysis of 13 regions of Arctic Europe and the Russian Arctic, economic growth in the Arctic does not necessarily mean an improvement in the economic situation for the local residents, especially in small communities [7, Middleton A. et al.; 8, Middleton A.]. The relevance of the need for an effective policy of sustainable development of the Arctic local economies is growing taking into account the increasing trends of youth migration from Arctic settlements and small towns to large northern cities and southern regions [9, Ljovkin V.E.].

Today, the world and national economies are developing on the basis of the SDGs. These goals cover priority social, economic and environmental issues at every level, from international relations to individual development opportunities. The 2030 Agenda for Sustainable Development was adopted by the United Nations in 2015 as an ambitious universal vision that sets 17 global priorities (SDGs) and 169 related targets. The SDGs address quality of life, health, housing, food and environmental security, inequalities, and social and economic development. Universal in scope, the SDGs should apply to all countries and be implemented at the national level, as well as at the local level¹. However, the global sustainable development agenda is not focused on any specific region, such as the Arctic. Due to the fact that the Arctic is both fragile and rich in resources, this unique region requires special attention.

¹ Kanuri Ch. et al. Sustainable development solutions network, getting started with the SDGs in cities. 2016. URL: <http://unsdsn.org/wp-content/uploads/2016/07/9.1.8.-Cities-SDG-Guide.pdf> (accessed 15 November 2021).

In order to achieve the SDGs effectively, appropriate systems of sustainable development indicators (SDI) have been developed, adapted to the specificities of the country (territory) and the level of analysis (international, national, local, macro- or micro-economic, etc.) [10, Fagerberg J.; 8, Middleton A.]. For example, in 2017, the Arctic Council focused only on three key interrelated Arctic issues and launched a project that explores the relationship between SDG 2 (End hunger and achieve food security for all), SDG 6 (Ensure availability and sustainable management of water and sanitation for all) and SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all)². This project addresses common Arctic features, but is not intended to monitor the sustainable development of the Arctic local economies. Russian researchers analyzed the Arctic problems and prospects for regional development [6, Pilyasov A.N., Polyachenko A.E.] and urban management [11, Zamyatina N.Yu. et al.], developed separate methods for assessing the management of Arctic cities in the context of ensuring their resilience [12, Pilyasov A.N., Molodtsova V.A.]. However, there are still few researchers and studies focusing on the development of sustainable Arctic local economies. In this study, we propose a system of sustainable development goals and indicators adapted for monitoring, analyzing and planning the sustainable development of local Arctic economies. The methodological purpose of the study is to test the proposed methodology on the example of the Shuryshkarskiy district (Yamalo-Nenets Autonomous Okrug, Russia), to identify its limitations and advantages; the practical goal is to analyze the problems and prospects of development of the local economy in the context of sustainable development goals, taking into account its Arctic specifics on the basis of the proposed methodology.

Method and data

In order to identify problems and prospects for sustainable Arctic local economies, we proposed an adapted system of goals and indicators of sustainable development (Table 6). Based on the generally accepted system of sustainable development indicators³, we selected individual ones, taking into account:

- relevance to the district level;
- features of the Arctic territories that determine the specifics of the approach to their socio-economic development, in particular, the priority goals and indicators of sustainable development for the Arctic, taken into account in the Business Index North [7, Middleton A.] and in the methodology of the Arctic Council⁴;

² Arctic Council. Sustainable Development Goals in the Arctic. 2017. URL: <https://arctic-council.org/ru/projects/sustainable-development-goals-in-the-arctic/> (accessed 15 November 2021).

³ Assembly U.G. A/RES/71/313: Work of the Statistical Commission Pertaining to the 2030 Agenda for Sustainable Development. 2017. URL: https://ggim.un.org/documents/a_res_71_313.pdf (accessed 15 November 2021).

⁴ Arctic Council. Sustainable Development Goals in the Arctic. 2017. URL: <https://arctic-council.org/ru/projects/sustainable-development-goals-in-the-arctic/> (accessed 15 November 2021).

- features and typical problems of settlements in the Russian Arctic, national strategic goals and priorities in the Arctic, identified in the development strategy of the AZRF up to 2035⁵.

The proposed system of goals and indicators was analyzed from two perspectives: problems and prospects. This approach allows not only to identify the current state of the territory on a particular problem of sustainable development, often recorded in accepted quantitative indicators, but also to consider qualitative information about specific resources, reserves of sustainable development of the territory. Comparison of the results of the analysis of problems and development reserves increases the effectiveness of management analysis and decision-making processes in the context of sustainable development of territories. This approach provides a scientifically substantiated analysis of the feasibility of existing municipal development programs and effective planning of new measures for the development of the territory.

On the example of the Shuryshkarskiy district, located in the west of the Yamalo-Nenets Autonomous Okrug (YaNAO), an analysis of the problems and prospects for sustainable development was carried out on the basis of the proposed adapted system of goals and indicators and using the available sources of official, documentary and sociological data.

Stages of approbation of the methodology:

1. The currently available analytical information about the Shuryshkarskiy district was systematized in five sections: population and labor resources, infrastructure and housing, budget expenditures and social policy, economy and entrepreneurship, management and strategic planning. On the basis of this information, a descriptive analysis of the state and socio-economic situation of the district was carried out using the methods of descriptive statistics, document analysis and sociological surveys. For the analysis, open documentary data (online — open federal and municipal statistics, information from tax authorities, geographical data, passport of a municipal settlement) and other documentary data (data and comments provided at the request of municipalities) were used. Along with documentary data, analytical reports and empirical studies of the Arctic Research Centre (Salekhard, YaNAO) were used: interviews with the heads of settlements in the Shuryshkarskiy district (February – March 2020) and a survey on life prospects and migration attitudes of local residents (February – March 2020) [13, Gladun E.F.; 14, Gladun E.F.].

2. The problems and prospects for sustainable development of the Shuryshkarskiy district were analyzed on the basis of the proposed system of goals and indicators of sustainable development using systematized analytical information about the district (Table 6).

3. Based on the comprehensive analysis of quantitative and qualitative data on the development of the district within the framework of the proposed system of sustainable development

⁵ Pravitel'stvo Rossiyskoy Federatsii. Strategiya Razvitiya Arkticheskoy zony Rossiyskoy Federatsii i obespecheniya natsional'noy bezopasnosti na period do 2035 goda [Government of the Russian Federation. Strategy for developing the Russian Arctic Zone and ensuring national security until 2035]. URL: <https://www.garant.ru/products/ipo/prime/doc/74710556/> (accessed 25 October 2022).

indicators, gaps between the current state, development trends of the district and the required state, the vector of its sustainable development were identified.

4. Based on the results of approbation of the proposed methodology, its capabilities and limitations for the development of a scientifically based policy for the sustainable development of the Arctic local economies were identified.

Analysis of the case study Population and labor resources

According to the latest census, the population of the Shuryshkarskiy district in 2010 was 9814 people, including 4381 Khanty, 1755 Komi-Zyryans, 171 Nenets, 19 Mansi, 11 Selkups, i.e. 6337 (65%) indigenous people⁶. In 2020, the population of Shuryshkarskiy district was 9435 people according to federal statistics⁷, and 9449 people according to the municipal settlement passport⁸. The population density of the district is 0.17 people/km. The share of indigenous peoples is 52%⁹. A slight discrepancy in the main demographic indicators in different sources is caused by the use of different methods. Local governments take into account all residents actually living in settlements, which is necessary for adequate life support of settlements, while federal statistical bodies take into account the number of citizens according to their permanent or temporary registration. Both methods consider only registered settlements¹⁰.

Table 1

Basic spatial and demographic characteristics of the Shuryshkarskiy district of the YaNAO¹¹

Settlement	Area, km ² (population density in settlements, people/km ²) 2010; 2020	Population according to 2010 census	Population according to the municipal settlement passport, as of 2020		
			Total (trend, %)	Indigenous peoples	Indigenous peoples, % of total population

⁶ Tyumstat. All-Russian population census 2010 Population and its distribution in the Tyumen Oblast; National composition and citizenship of the population in the Tyumen Oblast. 2011. URL: https://tumstat.gks.ru/perepis_nas2010 (accessed 10 January 2022).

⁷ Federal State Statistics Service. Population of the Russian Federation by municipalities as of January 1, 2020, 2021. URL: https://rosstat.gov.ru/storage/mediabank/CcG8qBhP/mun_obr2020.rar (accessed 10 January 2022).

⁸ Department of Economics of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. 2020. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

⁹ Department of Economics of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. 2020. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

¹⁰ State Duma of the Yamalo-Nenets Autonomous Okrug. Law of the YaNAO dated October 6, 2006 N 42-ZAO "On the administrative-territorial structure of the Yamalo-Nenets Autonomous Okrug". URL: <https://docs.cntd.ru/document/802075611> (accessed 20 October 2022); Federal State Statistics Service. Tyumen Oblast. The total land area of the municipality. 2020. URL: <http://www.gks.ru/dbscripts/munst/munst71/DBInet.cgi?pl=8006001> (accessed 20 October 2022); Federal State Statistics Service. Population of the Russian Federation by municipalities as of January 1, 2020, 2021. URL: https://rosstat.gov.ru/storage/mediabank/CcG8qBhP/mun_obr2020.rar (accessed 20 October 2022).

¹¹ Source: Compiled by the authors based on open online data. Department of Economics of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. 2020. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

1. Azovskoe rural settlement (5):	34.28 (12; 10)	411	335 (-18%)	228	68%
Azovy village		359	318	211	66%
Ilyagort village		8	1	1	100%
Ishvary village		4	0	0	0%
Karvozhgort village		4	4	4	100%
Poslovy village		36	12	12	100%
2. Gorkovskoe rural settlement (2):	43.63 (45; 39)	1973	1702 (-14%)	595	35%
Gorki village		1953	1672	567	34%
Khashgort village		20	30	28	93%
3. Lopkharinskoe rural settlement (3):	80.64 (7; 6)	574	500 (-13%)	422	84%
Lopkhari village		489	434	369	85%
Kazym-Mys village		66	51	38	75%
Sangymgort village		19	15	15	100%
4. Muzhevskoe rural settlement (7):	28.25 (147; 152)	4165	4298 (+3%)	1631	38%
Muzhi village		3609	3663	1243	34%
Anzhigort village		13	23	22	96%
Vershina-Voykary village		34	32	32	100%
Vosyakhovo village		382	436	204	47%
Novyy Kievat village		25	11	4	36%
Ust-Voykary village		100	129	123	95%
Khanty-Muzhi village		2	4	3	75%
5. Ovgortskoe rural settlement (6):	66.88 (20;20)	1327	1321 (0%)	1024	78%
Ovgort village		998	1028	769	75%
Evrigort village		25	14	14	100%
Nymvozhgort village		26	17	15	88%
Ovolynngort village		26	14	13	93%
Tiltim village		20	12	11	92%
Yamgort village		232	236	202	86%
6. Pitlyarskoe rural settlement (1): Pitlyar village	2.03 (247; 233)	501	474 (-5%)	374	79%
7. Shuryshkarskoe rural settlement (3):	53.86 (16;15)	863	819 (-5%)	626	76%
Shuryshkary village		795	757	564	75%
Lochpotgort village		12	8	8	100%
Unselgort village		56	54	54	100%
Total:	309.57 (32; 31)	9814	9449 (-4%)	4900	52%

As of 2020, 27 settlements were officially registered on the territory of the district¹², 17 of which had 100 or less people (villages) (Table 1). The population of the Shuryshkarskiy district has decreased by 4% over 10 years, and the proportion of indigenous peoples has decreased by 9%. The largest number of settlements in the district tends to decrease in population, except for Muzhi village, which is the largest one and has a population increase of 3% (Table 1). The largest population decline was observed in rural settlements with the lowest population density: Azov, Lopkha-

¹² As of 2022, 24 settlements are officially registered. The villages of Ilyagort, Ishvary and Lokhpogort were abolished due to the complete loss of population. As a result of the municipal reform of 2022, the Shuryshkarskiy district was transformed from a municipal district into the Shuryshkarskiy district municipal okrug, as a result, rural settlements and their governing bodies were abolished, all settlements are included in the municipal okrug.

rinsk, Gorkovskiy, which indicates trends of population consolidation at the level of large settlements.

Field research of the Arctic Research Centre, conducted in 2020, revealed 34 residents actually living in 11 places that are not included in official documents and statistics: Lorovo, Langvozhi, Loragort, Khorpungort, Muvgort, Vytvorgort, Post-Gort, Soram Logas, Tokhotgort, Mekhotpugor, Parovat (Fig. 1).

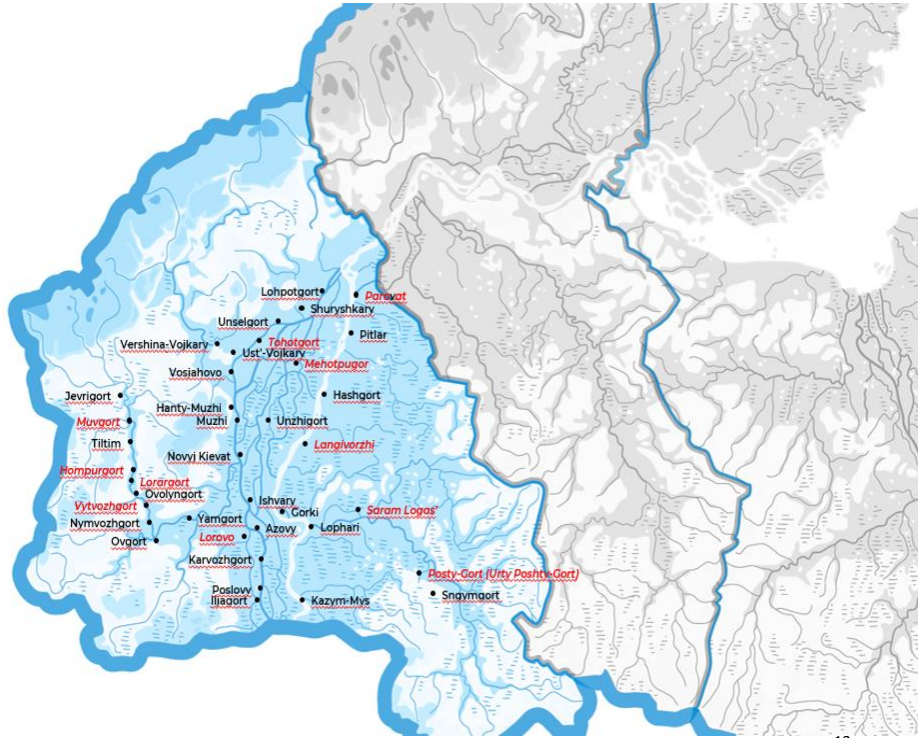


Fig. 1. Shuryshkarskiy district (38 settlements, including 11 unregistered ones)¹³.

Residence in unregistered settlements can lead to difficulties in the sphere of housing rights of citizens and their participation in state support programs.

¹³ Note: villages in bold type are officially included in the administrative-territorial structure of the district; in italics – liquidated settlements, in red – unregistered places of residence. Source: compiled by the authors based on open online data and the results of field research by the Arctic Research Center conducted in 2020.

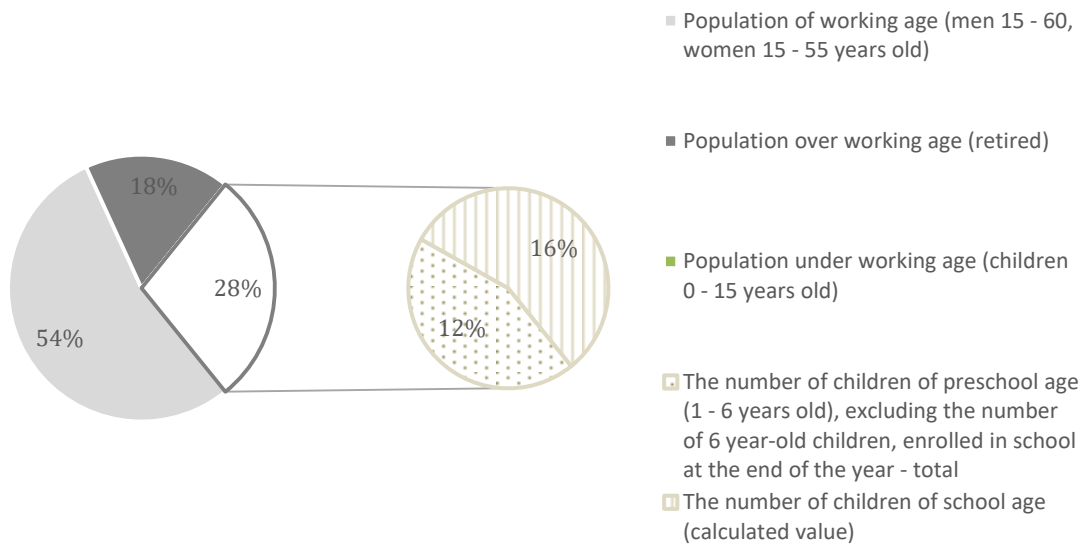


Fig. 2. Age structure of the population of the Shuryshkarskiy district according to data for 2020 ¹⁴.

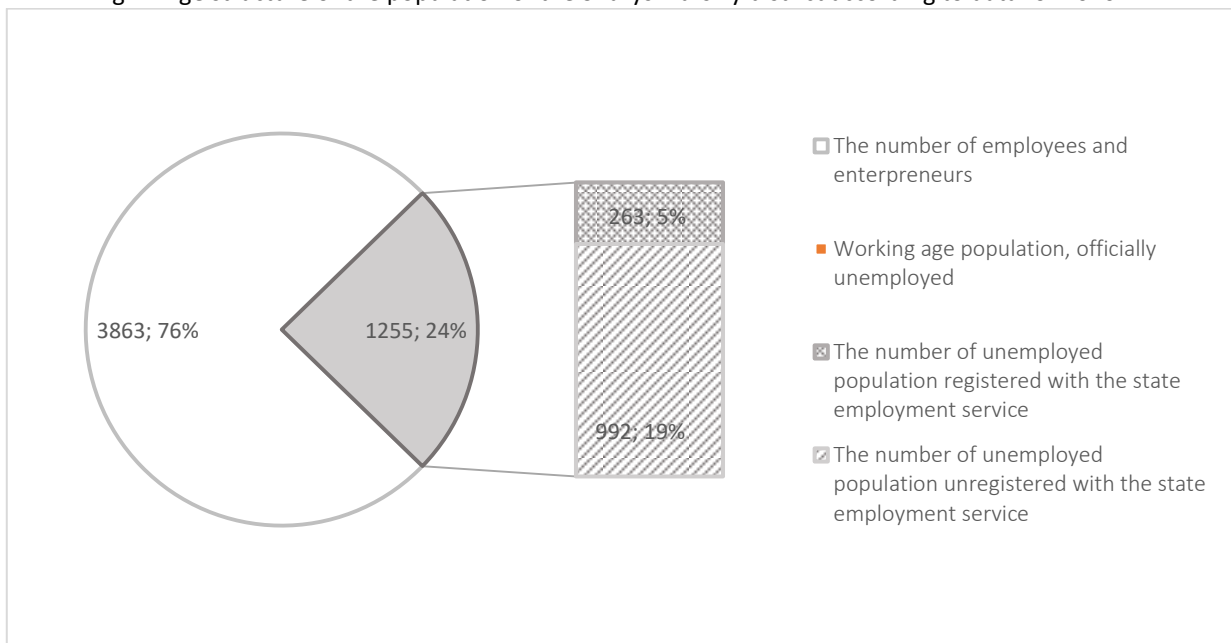


Fig. 3. Labor resources of the Shuryshkarskiy district according to data for 2020 ¹⁵.

The potential local labor resources of the Shuryshkarskiy district amount to 5118 people or 54% of the total population (Fig. 2). In 2020, there were 3675 employees working in companies ¹⁶, 361 employees working in SMEs, the number of individual entrepreneurs was 165 people ¹⁷. The number of unemployed people registered with the state employment service amounted to 263

¹⁴ Compiled by the authors on the basis of the Passport of Settlements of Municipalities of the YaNAO. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. 2020. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ The Federal Tax Service. Unified register of small and medium-sized businesses - recipients of state support. 2020. URL: <https://rmsp-pp.nalog.ru/index.html> (accessed 14 March 2022).

people at the end of 2020, and the official unemployment rate was 4.9%¹⁸. Thus, 992 people of working age are probably self-employed.

According to additional information from the municipalities, specifically requested in 2020, in 17 small settlements of the YaNAO (with a population of less than 100 people), 2/3 of the inhabitants of working age are officially employed (156 out of 238 people): less than half (69) are employed in small settlements at the place of residence, the remaining 87 people — outside small communities (in district settlements: Muzhi, Gorki, Ovgort, Lopkhari, as well as in the cities: Labytnangi, Salekhard, Tyumen). Thus, the labor migration in small settlements amounted to 56% in 2020 (87 out of 156 people).

Infrastructure and housing

Transport accessibility of small settlements depends entirely on meteorological conditions and seasonality, as the main modes of transport are air and water (in summer). Road transport is provided in winter by temporary “winter roads”. Evrigort, Tiltim and Sangymgort are accessible only by snowmobiles in winter. In winter and during the off-season, there are often no transport links at all. Passenger traffic is available only to Kazym-Mys. The volume of annual traffic is 352 people, including by air transport — 44 people, by water transport — 308 people.

Access to the main communications is limited in many small settlements of the Shuryshkarskiy district. Centralized power supply is available only in 8 out of 17 small settlements (Ovolynkort, Anzhigort, Novyy Kievat, Vershina-Voikary, Khashgort, Kazym-Mys, Unselgort, Poslovy), but only 2 of them (Khashgort and Kazym-Mys) have 24-hour electricity supply. All of the district’s small communities lack centralized water supply, sewerage and wastewater treatment facilities. Waste management is organized only in Novyy Kievat, in the form of a garbage dump.

The problem of safety is also very relevant for small settlements. Fires are extinguished by volunteer fire brigades, consisting of local residents. Mobile brigades provide medical assistance to residents, and ambulance aviation provides emergency aid. Only in Kazym-Mys there is an equipped paramedic station (room of 43.7 m²) in a one-story wooden building.

It should be noted that there are no infrastructure facilities for social protection and public services in small settlements of the Shuryshkarskiy district.

Mobile phone services are available in most settlements (Karvozhgort, Poslovy, Ovolynkort, Evrigort, Ovgort, Anzhigort, Khanty-Muzhi, Novyy Kievat, Vershina-Voykary, Kazym-Mys, Unselgort). Communication problems were noted in Nymvozhgort, Tiltim, Evrigort. Other villages have Ros-telecom payphones (Tiltim, Nymvozhgort, Khashgort, Lokhpodgort, Sangymgort).

As for educational services, school-age children are collected centrally from settlements and study at boarding schools in the Shuryshkarskiy district from September to May.

¹⁸ Department of Economics of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. 2020. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

The long-term policy of the regional authorities in relation to the infrastructural and socio-economic development of the district can be considered through the YaNAO Scheme of Territorial Planning¹⁹ (STP). STP is being developed in accordance with the Urban Planning Code of the Russian Federation and the Urban Planning Charter of the YaNAO²⁰ in order to create conditions for the sustainable development of the region through the development of engineering, transport, economic and social infrastructures, ensuring safe and favorable conditions for human life, protection and rational use of natural resources. The STP is developed on the basis of data from the federal state information system for territorial planning, strategies and programs for the socio-economic development of the region, decisions of state authorities and local self-government, strategies and programs for the development of economic sectors, investment programs of natural monopoly entities. The planning horizon of the current STP in the YaNAO is 2037, 2027 is the first stage.

The reconstruction and construction of helipads, the reconstruction of fire stations, the construction of medical, ritual and other social facilities in the administrative centers of the rural settlements of the Shuryshkarskiy district, as well as the arrangement of river infrastructure in Muzhi and Gorki are envisaged. Significant infrastructure facilities of long-term socio-economic importance for the district are the planned scheme for gas supply and gasification of the YaNAO, developed by PJSC Gazprom and PJSC Gazprom Promgaz, the construction of high-pressure gas pipelines and other gas distribution infrastructure for the settlements of Muzhi, Vosyakhovo, Gorki and Shuryshkar, as well as the construction of the Labytnangi – Muzhi – Azov – Tegi highway (Khanty-Mansi Autonomous Okrug) 315 km long. The plans for the spatial development of the district can be seen in the creation of mandatory infrastructure in each settlement for the collection and storage of municipal solid waste, which is planned in 15 settlements: Muzhi (3 663)²¹, Gorki (1 672), Ovgort (1 028), Shuryshkary (757), Pitlyar (474), Vosyakhovo (436), Lopkhari (434), Azovy (318), Yamgort (236), Ust-Voykary (129), Unselgort (54), Kazym-Mys (51), Khashgort (30), Poslovy (12), Novyy Kievat (11). The already abolished settlements Ilyagort, Ishvary and Lokhpogort, as well as the existing Vershina Voykary (32), Anzhigort (23), Nymvozhgort (17), Sangyngort (15), Evrigort (14), Ovolynngort (14), Tiltim (12), Karvozhgort (4), Khanty-Muzhi (4) remain without waste collection infrastructure. Agro-industrial facilities (cattle-breeding and crop production complexes) are planned to be constructed in Muzhi, Gorki, Vosyakhovo, Ovgort, Yamgort. Construction of facilities in the field of development and exploitation of hydrocarbon deposits, ore and non-metallic minerals in the area is not planned.

¹⁹ Pravitel'stvo Yamalo-Nenetskogo avtonomnogo okruga. Postanovlenie ot 9 yanvarya 2020 g. N 2-P «Ob utverzhdenii skhemy territorial'nogo planirovaniya Yamalo-Nenetskogo avtonomnogo okruga» [Government of the Yamalo-Nenets Autonomous Okrug. Decree of January 9, 2020 N 2-P "On approval of the territorial planning scheme for the Yamalo-Nenets Autonomous Okrug"]. URL: <https://depstroy.yanao.ru/documents/active/59524/> (accessed 21 September 2022).

²⁰ Zakon Yamalo-Nenetskogo avtonomnogo okruga ot 18 aprelya 2007 goda N 36-ZAO «Gradostroitel'nyy ustav Yamalo-Nenetskogo avtonomnogo okruga» [Law of the Yamalo-Nenets Autonomous Okrug of April 18, 2007 N 36-ZAO "Urban Planning Charter of the Yamalo-Nenets Autonomous Okrug"]. URL: <https://docs.cntd.ru/document/423976552> (accessed 21 September 2022).

²¹ Here and below, the size of the settlement is indicated in parentheses.

Fixing these objects in the STP is not a guarantee of their implementation; the distant planning horizon implies changes in external and internal factors. The reflection of the ongoing processes can be observed through the state and municipal programs of the region and district. The municipal program “Main directions of the urban planning policy of the Shuryshkarskiy district for 2016–2024” provides for the construction of a number of the above-mentioned, as well as other objects, but no new objects are planned for 2022–2024, which indicates that their construction is implemented on the basis of operational decisions²². The municipal program for energy efficiency and energy development²³ provides only for maintenance of public utilities and local roads. Indicators of the municipal program “Providing high-quality housing in the Shuryshkarskiy district for 2016–2024”²⁴ include the provision of housing for the population, m² per person (23) and the annual volume of commissioning of housing (7 thousand m²), but the quality of housing is not assessed by any parameters. In particular, the use of new energy-saving and heat-saving technologies, smart home technologies and other parameters that are significant for a sustainable local economy are not taken into account. According to the YaNAO municipalities’ passport, the number of citizens living in dilapidated houses is 2494 people (26.4%), the number of dilapidated and emergency buildings is 44 thousand m²; there should not be any dilapidated and emergency housing by 2025²⁵.

Budget expenditures and social policy

Total budget expenditures on maintenance of small settlements in the Shuryshkarskiy district for 2020 amounted to 4.6 billion rubles (Table 2), and only 5.3% of these expenses are covered by the resources of local economy: taxes and fees (Fig. 4). They are distributed as follows (Table 2).

Table 2

*The structure of budget expenditures of the Shuryshkarskiy district for 2020*²⁶

Expenditure of the budget	thousand rubles
Education	1 692 047.30
Social policy	677 340.06
National economy	502 949.10
Housing and communal services	457 398.85

²² Postanovlenie Administratsii munitsipal'nogo obrazovaniya Shuryshkarskiy rayon ot 17 marta 2017 goda № 220-a. Munitsipal'naya programma «Osnovnye napravleniya gradostroitel'noy politiki Shuryshkarskogo rayona na 2016-2024 gody» [Decree of the administration of the municipal formation Shuryshkarskiy district dated March 17, 2017 No. 220-a. Municipal program "The main directions of urban planning policy of the Shuryshkarskiy district for 2016-2024"]. URL: <https://admmuji.yanao.ru/documents/active/196734/> (accessed 21 September 2022).

²³ Postanovlenie Administratsii munitsipal'nogo obrazovaniya Shuryshkarskiy rayon ot 26 fevralya 2018 goda № 127-a [Decree of the administration of the municipal formation Shuryshkarskiy district dated February 26, 2018 No. 127-a]. URL: <https://admmuji.yanao.ru/documents/active/198644/> (accessed 21 September 2022).

²⁴ Postanovlenie Administratsii munitsipal'nogo obrazovaniya Shuryshkarskiy rayon ot 21 fevralya 2017 goda № 131-a [Decree of the administration of the municipal formation Shuryshkarskiy district dated February 21, 2017 No. 131-a]. URL: <https://admmuji.yanao.ru/documents/active/163275/> (accessed 21 September 2022).

²⁵ Department of Economics of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. 2020. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

²⁶ Ibid.

General government issues	426 115.88
Culture	287 013.57
Sport	94 683.48
National security and law	82 041.32
Mass media	65 310.00
National defense	1 988.57
Total:	4 286 888.13

The current socio-economic policy shows that the district will remain subsidized in the long term.

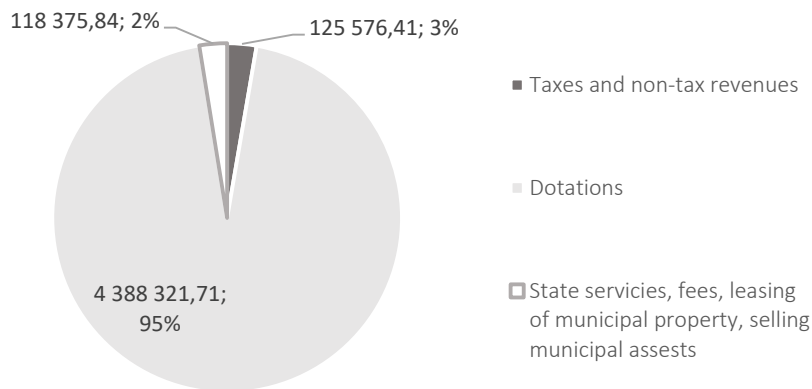


Fig. 4. Sources of budget revenues (Shuryshkarskiy district) ²⁷.

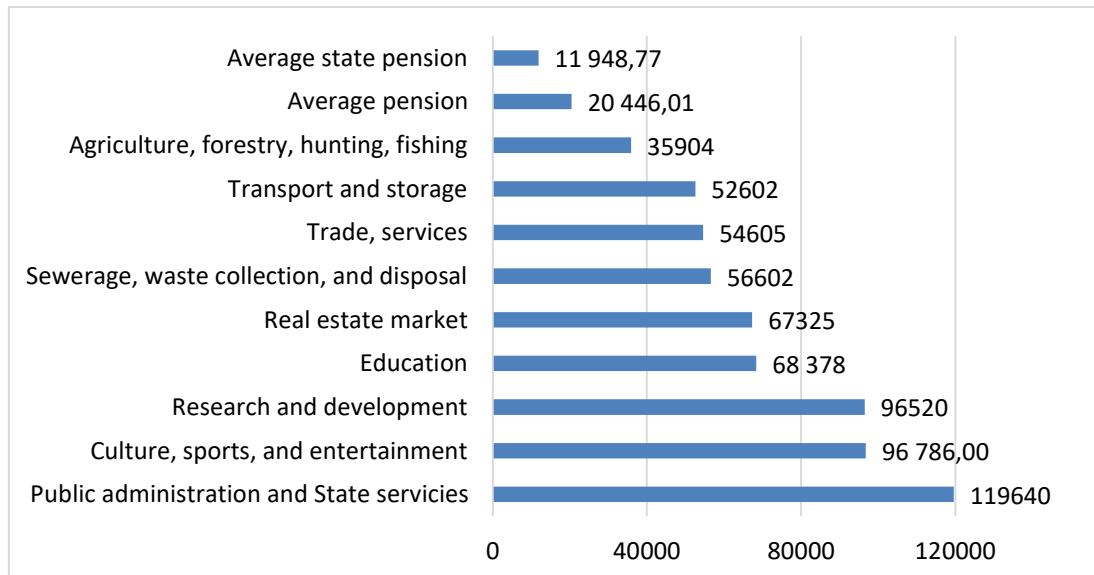


Fig. 5. Average monthly salary of employees by areas of employment, rub. (Shuryshkarskiy district) ²⁸.

²⁷ Compiled by the authors on the basis of the Passport of settlements of municipalities of the YaNAO. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

²⁸ Ibid.

Despite the average monthly wage of employees of organizations (78.168 rubles), the share of the population with cash incomes below the regional subsistence level is very high — 32%²⁹ (“Yamal Monitoring”, 2020). Pensioners are the most vulnerable category: the average state pension is below the regional subsistence level (13.510 rubles in 2020 and 14.033 rubles in 2021)³⁰. The lowest level of average monthly wages was recorded in the most significant areas for the sustainable development of local communities: agriculture, forestry, hunting, fishing (35.904 rubles), while the highest level of wages (119.640 rubles) was in public administration and public services (Fig. 5).

Table 3

Some indicators of social municipal programs for 2020 (Shuryshkarskiy district)

"Development of the education system of the Shuryshkarskiy district for 2016–2024"	
Proportion of children enrolled in additional education in the total number of children and young people aged 5–18	71%
Proportion of primary school children provided with free hot meals	100%
Level of satisfaction of recipients of municipal educational services	92%
"Main directions of policy for the development of culture and youth policy in the Shuryshkarskiy district for 2016–2024"	
Number of craftsmen in folk, decorative and applied arts, participation in events aimed at preserving, reviving and popularizing folk arts and crafts	108
Number of visits to cultural and leisure facilities	5 658
"Safe territory for 2016–2024"	
Crime rate in the Shuryshkarskiy district per 1000 inhabitants (for comparison, in the Yamalo-Nenets Autonomous Okrug)	8.4 (7.5)
Percentage of residents who believe that crime (including corruption) is spreading	30%
Percentage of residents who have experienced extremism	5%
"Protection of the population and territory from emergency situations for 2016–2024"	
Number of materials on life safety published in the media	70
Number of schoolchildren who took part in life safety courses	150
Municipal program "Development of physical culture, sports and tourism in the Shuryshkarskiy district for 2016–2024"	
Number of people involved in physical culture and sports (share in the total population, excluding preschool age)	4 558 (55%)
Number of sports facilities	916

Economy and entrepreneurship

The specialization of the region is historically associated with hunting for fur-bearing animals, fishing, reindeer herding – the traditional economic activities of indigenous peoples. During the Soviet collectivization period, fishery was industrialized and fish harvesting and canning were carried out through consumer cooperation. The economy of the region was based on the state pricing policy, favorable for the development of remote areas. Within the framework of market relations, local products have become uncompetitive, and local enterprises became unprofitable and required state support.

²⁹ Department of Economics of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. 2020. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

³⁰ Department of Economics of the Yamalo-Nenets Autonomous Okrug. URL: <https://de.yanao.ru/activity/64/> (accessed 11 December 2021).

One of the main reasons for inefficiency of local production lies in outdated technologies and equipment. Goods are produced by methods that were used 50 years ago. Technological modernization, diversification of the economy and launching of new enterprises require large investments in production assets and retraining of personnel. However, no information is currently available on the planning of large investment projects for the development and modernization of the district's national economy technologies, which would change the economic situation. Data on investment in R&D and innovative business are not available³¹.

Only 6% of investments in fixed assets were financed from the own funds of enterprises (Table 4), which indicates an extremely low level of own potential for their development.

Table 4

*Investments in fixed assets (Shuryshkarskiy district), 2020*³²

Indicator	Cost, thousand rubles	Share in total investment in fixed assets, %
Investment in fixed assets	530 761	100%
Own funds of enterprises	32167	6.06%
Attracted investments, including:	498 594	93.94%
Budgetary funds:	494 420	93.15%
Federal budget	670	0.13%
Regional budget	278 410	52.45%
Municipal budget	215 340	40.57%

The share of SMEs in the total number of people employed in the district is 14%. The highest level of entrepreneurship is in the village of Gorki: 237 SMEs and 8 individual entrepreneurs (Table 5).

Table 5

Entrepreneurship and SMEs in the Shuryshkarskiy district^{33, 34}

Village	Population, according to the Passport of settlements of municipalities of the YNAO for 2020	Number of individual entrepreneurs	Number of SMEs	Number of SME employees	Amount of financial support (thousand rubles)	Number of SMEs that received support	Share of entrepreneurs in the total population	Number of SME employees to population

³¹ Department of Economics of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. 2020. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

³² Compiled by the authors on the basis of the Passport of Settlements of Municipal Formations of the YNAO Department of Economy of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. 2020. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

³³ Compiled by the authors on the basis of data from the state tax authorities. The Federal Tax Service. Unified register of small and medium-sized businesses – recipients of state support. 2020. URL: <https://rmsp-pp.nalog.ru/index.html> (accessed 14 March 2022); The Federal Tax Service. Unified register of small and medium-sized businesses. 2021. URL: <https://ofd.nalog.ru/index.html> (accessed 14 March 2022).

³⁴ Note: the number of entrepreneurs is calculated as the sum of the number of individual entrepreneurs and SMEs.

Unselgort	54	1	0		0	0	2%	2%
Ust-Voykary	129	2	0		150	1	2%	2%
Yamgort	236	2	0		0	0	1%	1%
Azovy	318	3	0		7	1	1%	1%
Lopkhari	434	6	0		0	0	1%	1%
Vosyakhovo	436	5	1	1	0	0	1%	1%
Pitlyar	474	6	1		0	0	1%	1%
Shuryshkary	757	16	1	15	505	3	2%	4%
Ovgort	1028	14	2	4	150	1	2%	2%
Gorki	1672	21	8	237	68211	6	2%	15%
Muzhi	3663	89	17	104	12114	31	3%	5%
Total	9201	165	30	361	81137	43	2%	6%

The correlation between the population of a settlement and the number of entrepreneurs is visually noticeable (Fig. 6); however, the number of entrepreneurs varies significantly in settlements (Table 5).

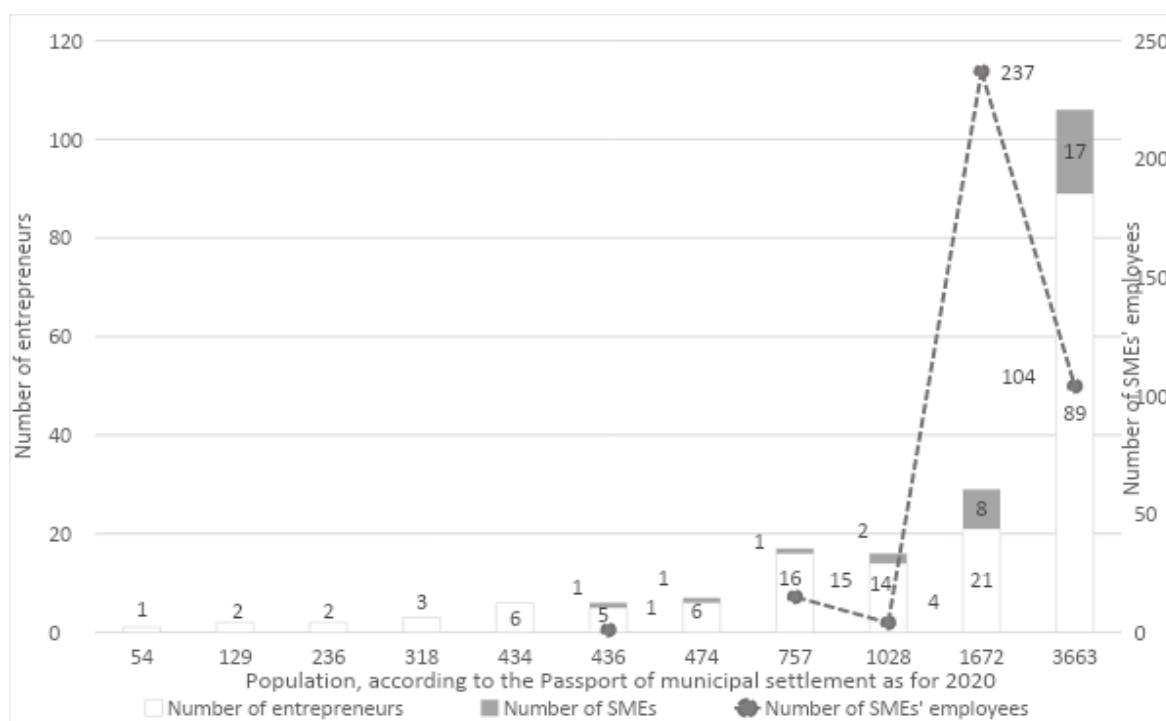


Fig. 6. Correlation of the population and the number of entrepreneurs in the Shuryshkarskiy district³⁵.

Management and strategic planning

The main prospects for the development of the district are associated with a more complete use of natural resources. The main points of growth outlined in the “Strategy for the socio-economic development of the Shuryshkarskiy district up to 2030” are: agriculture and food industry; tourism. The main economic activities are fishing and reindeer herding, but they are currently subsidized (Duma of Shuryshkarskiy district, 2018). The produced reindeer meat is almost entirely consumed in the dis-

³⁵ Compiled by the authors on the basis of data from the state tax authorities and the Passport of municipalities. The Federal Tax Service. Unified register of small and medium-sized businesses. 2021. URL: <https://ofd.nalog.ru/index.html> (accessed 14 March 2022); Department of Economics of the Yamalo-Nenets Autonomous Okrug. IAS Monitoring Yamal. Passport of the municipalities of the Yamalo-Nenets Autonomous Okrug. 2020. URL: <https://monitoring.yanao.ru/pasport/> (accessed 14 December 2021).

tract. Tourism cannot get significant development due to the remoteness of the settlements. Thus, the development strategy of the district does not imply fundamental changes; it is aimed at preserving the traditional way of life of indigenous peoples and traditional economic activities.

By 2022, several municipal programs on improving public administration have been fully or partially implemented: “Management of municipal property for 2016–2021”, “Management of municipal finances, increasing the sustainability of the budgets of municipalities in the Shuryshkarskiy district for 2016–2024”, “Implementation of municipal policy for 2016–2024” and “Satisfaction of residents with the activities of local governments of the Shuryshkarskiy district”. All of them concern only operational activities and do not imply any strategic changes in the improvement of municipal management.

Results and discussion

For the analysis of problems and prospects of sustainable development in the Shuryshkarskiy district, an adapted system of sustainable development goals and indicators was used, selected from the general list of global sustainable development goals, taking into account their relevance to the level of the district and the characteristics of the Arctic territories and priorities for their development, and two analytical sections: problems and prospects (for a description of the proposed methodology, see the Method and Data section). The results of the analysis of the available information about the Shuryshkarskiy district are systematized in Table 6.

Table 6

Analysis of problems and prospects for sustainable development of the local economy

SDG	Questions and indicators for analysis	Problems	Prospects
1.1. End poverty.	1.1. Number and proportion of the poor. 1.2. Social policy, benefits and subsidies for the poor. 1.3. Equal rights to economic resources. 1.4. Regional and municipal programs to support the poor and vulnerable segments of the population. 1.5. Development strategies to support accelerated investment in poverty eradication activities.	<ul style="list-style-type: none"> • High proportion of the poor (32%). • Low level of provision of large families with free land plots. • Sufficient gap between the average wages of civil servants and agricultural workers. • Average state pension is below the regional subsistence level. • Regional and municipal programs to support the poor and vulnerable segments of the population are ineffective and mainly based on subsidies. 	<ul style="list-style-type: none"> • Large amount of unused and vacant land suitable and in demand for house building, business and agricultural use. • Natural resources can be used to develop the local economy through their processing based on the latest technologies and R&D. • Traditional art, technology and knowledge can be capitalized in products in demand. • Development strategies and municipal support programs based on SME development and self-sufficient local economy. • Development of a system for accounting

			for the actual income of households.
2. Eradicate hunger, food security, improved nutrition and sustainable agriculture.	<p>2.1. Increase agricultural productivity and incomes for small-scale food producers through secure and equitable access to land, knowledge, financial services, markets, and opportunities for added value creation and non-agricultural employment.</p> <p>2.2. Ensure sustainable food production systems and implement sustainable agricultural practices that increase productivity and production, which can help preserve ecosystems.</p> <p>2.3. Investments in rural infrastructure, agricultural research and extension services, development of technologies to increase the productive potential of agriculture.</p> <p>2.4. Effective functioning of food markets.</p>	<ul style="list-style-type: none"> • Lack of higher education, vocational training and R&D. • No investment in R&D, innovation and new downstream technologies. • No indicators for agricultural productivity and sustainability. • High prices and low quality of food. • Low investments in rural infrastructure. 	<ul style="list-style-type: none"> • Technological modernization of agriculture. • Introduction of concepts and technologies of carbon agriculture and forestry. • Legalization of personal subsidiary plots. • Granting the rights to use land and water resources.
3. Ensuring healthy lifestyles and promoting well-being for all.	<p>3.1. Access to quality and affordable basic reproductive health services and medicines.</p> <p>3.2. Prevention and treatment of drug and alcohol abuse.</p> <p>3.3. Ensuring a safe environment, accidents and natural disasters.</p> <p>3.4. Introduce health-saving technologies, finance health care, recruit, develop, train and retain health care staff.</p>	<ul style="list-style-type: none"> • Limited access to quality and affordable basic reproductive health services and medicines. • No data on the harmful use of alcohol. • High crime rate. • Low financing of health care and low quality of local medicine. • Fire extinguishing is carried out by voluntary fire brigades. 	<ul style="list-style-type: none"> • Implementation of technologies for early warning, risk reduction and management of national and global health risks. • Implementation of remote medicine technologies. • Implementation of preventive health-saving technologies.
4. Inclusive and equitable quality education and promotion of lifelong learning opportunities for all.	<p>4.1. Access to quality early childhood development, care and pre-primary education.</p> <p>4.2. Quality local primary and secondary education.</p> <p>4.3. Equal access to affordable and quality technical, vocational and higher education, including university education.</p> <p>4.4. Access to quality training in skills needed for local sustainable development for all ages.</p>	<ul style="list-style-type: none"> • Lack of objective indicators of the quality of early childhood development, childcare, preschool, primary and secondary education. • Lack of locally accessible and high-quality technical, professional and higher education, including university education. • Lack of effective blended learning. 	<ul style="list-style-type: none"> • Monitoring and improving the quality of local education through objective indicators: learning, practical and scientific achievements of schoolchildren, demand for and success of specialists at the local and global levels. • Availability and access to quality lifelong learning and getting skills for sustainable

	5. Safe, non-violent, inclusive and effective learning environment for all.		local development for all ages. <ul style="list-style-type: none"> • Development of educational expeditions, exchange programs.
6. Access to and sustainable management of water and sanitation for all	6.1. Adequate and equitable sanitary and hygienic conditions for all. 6.2. Reducing pollution, eliminating landfilling and minimizing releases of hazardous chemicals and materials. 6.3. Protection and restoration of water-related ecosystems. 6.4. Recycling and reuse technologies. 6.5. Strengthen the involvement of local communities in improving water and sanitation management.	<ul style="list-style-type: none"> • Lack of environmental indicators. • Lack of indicators for use and implementation of new recycling and reuse technologies. • Lack of centralized water supply, sewerage and wastewater treatment facilities. 	<ul style="list-style-type: none"> • Implementation of recycling and reuse technologies. • Ensuring adequate and equitable sanitation and hygiene conditions for all. • Participation of local communities in improved water and sanitation management.
7. Ensure access to affordable, reliable, sustainable and modern energy sources for all.	7.1. Access to affordable, reliable and modern energy services. 7.2. Significantly increase the share of renewable energy sources in the global energy balance. 7.3. Increase energy efficiency. 7.4. Access to clean energy research and technology. 7.5. Investments in energy infrastructure and clean energy technologies.	<ul style="list-style-type: none"> • Centralized power supply is available only in 8 out of 17 settlements, only 2 of them have 24-hour electricity supply. • No local strategic programs for improving energy efficiency and renewable energy sources. • Lack of investments in energy infrastructure development. 	<ul style="list-style-type: none"> • Implementation of the latest energy efficiency and renewable clean energy technologies. • Development of R&D in the field of energy and infrastructure. • Development of alternative energy (renewable).
8. Promote inclusive and sustainable economic growth, full and productive employment and decent work for all.	8.1. Growth of domestic product per year without damage to the local ecosystem. 8.2. Increased economic productivity through diversification, technological upgrading and innovation, including by focusing on high value-added and labour-intensive industries. 8.3. Consumption and production efficiency 8.4. Full and productive employment and decent work for all. 8.5. Safe and reliable working environment. 8.6. Sustainable tourism that creates jobs and pro-	<ul style="list-style-type: none"> • No clear and effective development strategy that ensures long-term sustainable economic development. • High level of unemployment. • Small number of SMEs and entrepreneurs. • Lack of self-sufficient and sustainable local economy (94% of expenditures are subsidized). • No income from local services and tourism. 	<ul style="list-style-type: none"> • Promotion of development-oriented policies that support productive activity, decent job creation, entrepreneurship, creativity and innovation. • Supporting modernization and creation of self-sufficient local business. • Eradication of poaching • Integration of elements of the post-industrial economy into indigenous habitats: eco-patrol, tourism, medicine, clean-

	motes local culture and products.		ing, reclamation, restoration, cultivation of biological resources.
9. Create sustainable infrastructure, promote inclusive and sustainable industrialization, and encourage innovation.	<p>9.1. Quality, reliable, sustainable and resilient infrastructure, including regional and cross-border infrastructure.</p> <p>9.2. Access of small-scale industries and other enterprises to value chains and markets.</p> <p>9.3. Local technological and innovative development.</p> <p>9.4. Access to information and communication technologies.</p>	<ul style="list-style-type: none"> • Insufficiency of investments in the modernization of infrastructure and the construction of new infrastructure. • Transport accessibility of small settlements depends entirely on meteorological conditions and seasonality. • No investment in R&D and innovation. 	<ul style="list-style-type: none"> • Providing a favorable political environment for industrial diversification and increasing the cost of commodities. • Support for the development of local technologies, research and innovation.
10. Reduce inequality.	<p>10.1 Digital inequality.</p> <p>10.2 Income differentiation.</p>	<ul style="list-style-type: none"> • Lack of monitoring of income inequality indicators. • Sufficient gap between the highest and the lowest incomes. 	<ul style="list-style-type: none"> • Access to communication and digital technologies, digital competencies. • Monitoring of income inequality indicators. • Development of policies to reduce income inequality.
11. Make settlements inclusive, safe, resilient and sustainable.	<p>11.1. Universal access for all to adequate, safe and affordable housing and basic services.</p> <p>11.2. Access to safe, affordable, accessible and sustainable transport.</p> <p>11.3. Ability for collaborative, integrated and sustainable planning and management of settlements.</p> <p>11.4. Protect and conserve the world's cultural and natural heritage.</p> <p>11.5. Positive economic, social and environmental links between urban, sub-urban and rural areas.</p>	<ul style="list-style-type: none"> • Number of citizens living in dilapidated housing stock is 2494 people (26.4%). • A large number of families need a land plot for individual housing construction. • No data on the practice of participatory management. • Labor migration from small settlements. 	<ul style="list-style-type: none"> • Implementation of participatory management and budgeting practices. • Development of local tourism, including cultural, eco- and agro-tourism. • Increasing food security and self-sufficiency of the local economy. • Development of cooperation and collaborative technologies. • Improvement of housing and infrastructure.
12. Ensuring sustainable consumption and production patterns.	<p>12.1. Recycling economy, zero waste and harm to nature.</p> <p>12.2. Reduce waste generation through prevention, reduction, recycling and reuse.</p> <p>12.3. Up-to-date information and awareness about sustainable development and living in har-</p>	<ul style="list-style-type: none"> • No data on economics of recycling and waste reduction. 	<ul style="list-style-type: none"> • Encouragement of local companies to implement sustainable models. • Changes in regulatory requirements for waste disposal in small towns.

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The proposed methodology revealed a generally low level of compliance of the current state and current trends in the development of the Shuryshkarskiy district with the sustainable development goals. Existing municipal development programs, although they have a positive effect on the sustainability of the local economy and the viability of local communities, are still insufficiently focused on the SDGs and do not use a wide range of available resources and reserves for the sustainable development of the region (see Table 6). The testing of the methodology on the example of the Shuryshkarskiy district has also revealed the problems of lack of data, inconsistency of the current system of management accounting, control and monitoring with the objectives of sustainable development of the territory.

In their strategies, all Arctic states adhere to the principles of sustainable growth and development of the Arctic territories [15, Fow S.J.]. In order to make the principles really “work”, they have to be embedded in the core of the territorial management system: analysis, planning, monitoring and control of management decisions and development programs. There are many interests colliding in the management of the Arctic development, often in different directions at the operative level, but common at the strategic level: global (vulnerable ecology of the Arctic and its great impact on the overall ecological balance in the world, preservation of the culture of indigenous peoples, etc.), national (national security and resource provision), regional and municipal (quality of life of various groups: shift workers, indigenous peoples, local residents, shareholders of large oil and gas companies, etc.). The sustainable development of the Arctic territories can be achieved by integrating the goals of various actors at the strategic level, systemic planning and implementation of programs for the sustainable development of territories through participatory management. This approach maintains a balance of interests both within the Arctic community (development of a local market economy, traditional occupations, innovations, modernization of the national economy and preservation of the culture of indigenous peoples), and between Western concepts of environmental protection, sustainable development, and the goals of the national Arctic development strategy, including the intensive economic development of regional natural resources and the goals of improving the quality of life of various actors in the Arctic local economies.

Conclusion

Many researchers note the inability of global initiatives in the field of sustainable development to impose strict obligations on countries, which has led to global environmental degradation [16, Barnhizer D.]. The ongoing decline of ecosystems makes it difficult to find the most effective sustainable development policies [17, Benson M.H., Kundis R.C.]. The most pessimistic view is that achieving sustainability is impossible because it requires people to be what they are not. They point to a significant gap between the high goals of sustainable development and the real possibilities and desires of people [16, Barnhizer D.].

For many territories, economic growth is the most significant indicator of sustainable development. However, some countries and local communities use alternative measures (such as child mortality rates, educational level or incarceration rates). Governments at the national, regional and local levels are developing a variety of sustainability targets and indicators, expanding the scope for quantitative and qualitative analysis of decision-making processes and monitoring their consequences. The development of the management system entails new accounting and control systems, development programs and legal regulations that remove obstacles to sustainability in a way that contributes to the achievement of goals [18, Perkins N.D.]. The proposed methodology is also based on a broad view of sustainability, which involves the application of benchmarks that take into account the impact of the ongoing socio-economic policy on the economy, ecosystems and institutions in both the short and long term [19, Dernbach J.C.].

Arctic territories are particularly susceptible to the complex negative consequences of technical and economic growth in the context of globalization, which entails resource wealth on the one hand, but also a high degree of vulnerability of northern nature and traditional occupations of local northern communities on the other. The high level of socio-economic, technological risks and life safety determines the specificity of the “Arctic” mentality, in particular the prevalence of practices based on cooperation, mutual assistance and respect for nature, as well as food security practices at the level of local economies. From our point of view, sustainable development of the Arctic is impossible without sustainable local economy that functions on the basis of the systematic use of cooperation tools and depends on the climatic, socio-economic features of the Arctic territories and the cultural and economic traditions of the indigenous peoples inhabiting them. In order to effectively implement the sustainable development policy of the territory, stakeholders can create special agencies and public organizations (at the regional or local level) to take into account the specific interests of indigenous peoples, local enterprises and industries³⁶.

The proposed methodology, which is an adapted system of goals and indicators of sustainable development, analyzed in two dimensions (problems and prospects), helps to improve the consistency and scientific validity of management decisions on the sustainable development of territories, and is also a convenient tool for participatory management. Approbation of the methodology on the example of the Shuryshkarskiy district made it possible to identify serious problems in the development of the Arctic local economy: low quality of life, lack of independence, subsidiarity, insufficient orientation of strategic plans for the development of the territory towards SDGs. The systems of local goals and indicators of sustainable development, municipal databases and municipal management processes need to be further developed in the context of their integration and compliance with the goals of sustainable development.

The results of the study showed that the proposed approach to the analysis of the Arctic local economies has great potential for the development of local management systems that ensure the real

³⁶ Office of Research and Development National Risk Management. Research Lab., Sustainable Tech. Div., EOPA/600/R/12/687, A Framework for Sustainability Indicators 2. 2012.

sustainable development of territories, increase their prospective viability and quality of life of diverse local communities.

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