

# Social Problems of the Russian Arctic's Mono-Towns: How to Resolve Them?

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## Abstract:

Mono-towns which are systematically located in hazard areas occupy a special place in the general system of Russia's Arctic Zone resettlement. One of the main problems of most Arctic mono-towns is underestimation of social priorities of their development which produces disparities in the socio-economic development of the Arctic regions as a whole.

**Keywords:** Arctic, mono-town, material well-being, social policy

## I. INTRODUCTION

Problems of mono-towns have not arisen recently but nevertheless they have not lost their relevance yet. Mono-towns in most cases were created during the existence of the Soviet Union i.e. the period of planned economy. These cities and towns were created in order to provide large industrial enterprises, so-called "flagships of Soviet industry" with labor force. Currently, most Russian economists consider the idea of creating cities which livelihood is subjected to a single enterprise activity to be erroneous (Kryukova *et al*, 2014; Ushakov & Chich-Jen, 2018). However, these cities exist, operate and serve dilapidated but operational remains of the Soviet economy.

The negative feature of the mono-profile municipal entities is their low diversification. For persons who might have been dismissed from their job, they experience difficult securing jobs elsewhere. With systematic unemployment, an emerging issue is that there is likely to be a significant decline in a region's economic and business activity, translating into stalled progress

in overall productivity. A trickle-down effect of mono-profile municipal institution challenges is that the rest of the region could be affected significantly, especially in terms of declined living standards and also region-wide increase in social instability.

The creation of mono-towns was one of the principles of the Arctic's development under Soviet rule. Currently, social problems in mono-towns in the Russian Federation's Arctic Zone are particularly large. Social problems inherent in all mono-towns, are burdened here with such harsh environmental conditions as: short summers, cold temperatures, lack of oxygen due to the high latitudes. In addition, geographical remoteness of hard-to-reach settlements leads to the formation of high consumer prices. Therefore, the reduction of income which affects the Russian Arctic's inhabitants is particularly negative.

The purpose of the research is to reveal the system and long-range problems of mono-towns in the Russian Arctic.

To achieve the object of the research it is necessary to solve the complex of following tasks:

- to analyze the urbanization indicators of the Russian Federation's regions completely or partially located in the Arctic Zone;
- to characterize mono-towns of the Russian Federation's Arctic Zone;
- to characterize rural settlements of the Russian Arctic;
- to identify social problems of Russian Arctic's mono-functional settlements;
- to group the factors that generate social problems of mono-towns in the Russian Arctic on the basis of subjective and objective genesis;
- to present main lines of resolving social problems in Russian Arctic's mono-towns.

In our research we have proceeded from the following hypotheses:

- firstly, mono-functional settlements which were created in Soviet times for the Arctic development now have lots of serious social problems;
- secondly, all urban and rural settlements in the Russian Federation's Arctic Zone with mono-industry economy carry out activity in certain conditions, which predetermine the objective nature of social problems; the management of these factors is impossible;
- thirdly, the current economic situation and prospects of its development determine the subjective nature of social problems of mono-towns in the Russian Arctic; for all that, there may be universal management principles, aimed at solving social problems.

## II. METHODOLOGY

The objects of the research are mono-towns or mono-profile municipal units of the Russian Arctic (*On the development of the Arctic zone...*). This category includes settlements with the following characteristics:

- location in the territory of the Russian Federation's Arctic Zone;

- status of urban settlements – towns and urban-type communities;
- population exceeds 3,000 inhabitants;
- 20% or more people are employed in the same city-forming enterprises;
- primary activity of city-forming enterprises is mining operations and manufacture or processing of industrial products as well.

From the standpoint of social protection mono-towns which economy is based on oil and gas extraction are the least vulnerable. Oil and gas producing and processing enterprises operate successfully and their production is in high demand. The inhabitants of these cities draw good salaries; therefore state support does not apply to these towns.

All the rest mono-towns according to the Order of the Government of the Russian Federation of 29.07.2014 No. 1398-R (edition of 18.03.2019) "On approval of the list of mono-profile municipal units of the Russian Federation (mono-towns)" are divided into three categories:

- category I – mono-towns with the most difficult socio-economic situation;
- category II – mono-towns where there is a risk of worsening of socio-economic situation;
- category III – mono-towns with a stable socio-economic situation (*On approval of the list...*).

These categories are ranged depending on the degree of deterioration prevailing in their socio-economic situation. The situation is determined on the basis of indicators values characterizing an activity of town-forming enterprises, a situation on the labor market in mono-towns and an assessment of the situation by the population.

Mono-profile municipal units in the Russian Arctic have been considered as well. This category included settlements with the following characteristics:

- location in the territory of the Arctic Zone of the Russian Federation;
- status of permanent settlement;
- 20% or more people are employed in the same city-forming enterprise
- The following indicators have been considered in the research:
  - By 2018, a region is considered as Russian Federation's territorial subject
  - City number reflects the sum of settlements characterized by the status of a city by 2018
  - Citizen population is considered as the sum of residents in urban regions compared or relative to the sum of the people in Russian Federation's territorial subject by 2018, calculated as a ratio in percentage
  - Annual, the average number of people in Russian Federation's subject is the population size and was considered in 2018 in thousands
  - Based on the approved list, the mono-town group refers to a town that is shaped, determined, or affected by a current production infrastructure

### III. LITERATURE REVIEW

At the heart of social and economic researches of scientists from some countries having northern territories (Denmark, the USA, Russia, Canada, Norway, Iceland, Sweden, Finland) there is a number of general conceptual theses. Firstly, the necessity of preservation of quantitative and qualitative economic potential of the Arctic Zone. Secondly, the protectionism and compensation in economy and social spheres. Thirdly, the priorities of "nondestructive" social and economic development[43-48]. These theses are reflected in the works of such authors as R. Andrew (*Andrew, 2014*), H. Bjornland and L. Thorsrud (*Bjornland & Thorsrud, 2014*), D. Brig, B. Larsen and B. Skorstad (*Brig et al, 2017*), G. A. Gill and D.

Sevigny (*Gill & Sevigny, 2015*), G. Sabathil (*Sabathil, 2010*), U.K. Sinha (*Sinha, 2018*), P. Skuf'in with co-authors (*Skuf'in et al, 2019*).

Taking into account the stability of conceptual theses of the development and lack of contradictions among policy and management, most of modern studies concerning problematics of social and economic development of the North are aimed at the solution of applied problems (*Black et al, 2011; Howe et al, 2014; Samarina et al, 2018b; Silin, 2015; Spence, 2014; Torre & Wallet, 2014; Zamaraeva, 2014*).

The vital activity of the population in mono-towns and the production activities of main city-forming enterprises are closely related (*Samarina et al, 2019b; Tötzer & Gigler, 2005; Trippel & Otto, 2009*). It's not a coincidence that in addition to the terms "mono-town" and "mono-profile municipal unit" the term "company town" is widely used in scientific literature (*Agrawal et al, 2010; Dinius & Vergara, 2011; Green, 2012; Tony, 2002*). As soon as major enterprises reduce production speed and cut or even stops paying wages, the vital activity of the population deteriorates (*Barnes & Hayter, 2011; Bartik, 2009; Rodrik, 2008; Suopajärvi et al, 2016*). Many residents of towns do not have the ability to leave and continue to live in a dying single-industry town (*Gill, 2002; Rudacille, 2011; Wood & Taylor, 2004*).

Only state support can help solving these systemic problems. Scientists around the world agree that mono-towns' problems cannot be solved without direct state participation (*Dale, 2002; Hinderink & Titus, 2002; Shastitko & Fakhitova, 2015*). Our research corroborates these conclusions as well (*Samarina et al, 2018a; Skufina et al, 2015; Skufina et al, 2019a; Skufina et al, 2019b*).

### Key findings of the research

Indicators of urbanization of the Russian Federation regions, completely or partially located in the Arctic Zone

First of all, let us estimate the statistical indicators of urbanization of the of Russian Federation subjects whose territories are completely or partially located in the Arctic Zone.

The research is based on the data of the Federal State statistics service of the Russian Federation as of 2018 (*Federal State statistics service...*). The results are presented in Table 1.

Table 1. Some statistical indicators of urbanization of the Russian Federation subjects, whose territories are completely or partially located in the Arctic Zone as of 2018 (Compiled by authors according to the materials of Federal State statistics service of the Russian Federation (*Federal State statistics service...*)).

Subject of the Russian Federation	Area, sq. km	Number of cities	Percentage of townspeople, %
<b><i>Subjects of the Russian Federation completely located in the Arctic Zone</i></b>			
Murmansk Region	144900	16	92,33
Nenets Autonomous Area	176810	1	72,84
Chukotka Autonomous Area	721481	3	70,51
Yamal-Nenets Autonomous Area	769250	8	83,82
<b><i>Subjects of the Russian Federation partially located in the Arctic Zone</i></b>			
The Republic of Karelia	180520	16	80,41
Arkhangelsk Region	589913	32	78,00
The Sakha Republic (Yakutia)	3103200	13	64,1
The Republic of Komi	416774	10	78,11
Krasnoyarsk Territory	2366797	23	77,39

Russian Federation's coverage area stands at 17,125,191.0 square kilometers. These statistics reflect the figures by 2018, documented by the Federal State Statistics Service. Also, the Federation's subject's area of coverage stands at 1,812,441 square kilometers as of 2018, with the Arctic Zone dominating these subjects. Hence, the subjects' area of coverage reflects the Federation's 10.58 percent of the territory. The eventuality is that the Federation commands a significant part of the Arctic territories compared to other global states.

It is also worth highlighting that the territories in the Arctic zone have their urban population share observed to be very high. This increase in the share is reported to have played a crucial role in relation to industrial development in the Arctic zone. By 2018, Russian Federation's urban population was documented to be about 74.43 percent, with the average value standing at 79.88 percent in the Arctic zone. From an industrialization perspective, developments

regionally stand at 92.33 percent for urban persons in Murmansk zone, a high index. On the other hand, 70.51 percent is the value for Chukotka Autonomous Area in relation to industrial development, a lower index. A similar outcome is documented for the case of Nenets Autonomous Area, with the figure standing at 71.84 percent. Notably, these zones have fewer indigenous persons.

Indeed, the Arctic region's number of towns and cities is small. From Table 1, urban settlements are 139 located in the Arctic Zone's boundaries while those that are located in the Arctic zone are 127. For some regions, only one urban settlement is present. An example is a case of the Nenets Autonomous Area, standing at 177,000 square kilometers. Also, the Chukotka Autonomous Area is a sizeable territory standing at 721,000 square kilometers but it only has three towns.



*Characteristics of mono-towns of the Russian Federation's Arctic Zone*

Mono-profile towns and townships occupy a special place in total settlement system of Russia's Arctic Zone. They are presented in table 2.

Table 2. Mono-profile towns and settlements of the Russian Federation's Arctic Zone (Compiled by authors according to the materials of Database of municipal units indicators: Federal State Statistics Service (Database of municipal units indicators...))

Category	Municipal unit	Population, thousand people	City-forming enterprise
I	Onega (Arkhangelsk Region)	19,381	JSC "OnezhskyLDK", SegezhaGroup
	Kirovsk (Murmansk Region)	26,581	Kirovsk branch of JSC "Apatite", JSC "FosAgro"
	Kovdor (Murmansk Region)	16,623	JSC "Kovdor GOK", JSC "MCC "EuroChem"
	Revda settlement (Murmansk Region)	8,004	LC "Lovozerky GOK", LC "fin-Project"
II	Novodvinsk (Arkhangelsk Region)	38,735	JSC "Arkhangelsk Pulp and Paper Mill", Pulp Mill Holding GmbH
	Nickel settlement (Murmansk Region)	11,437	Kola Mining and Metallurgical Company"
	Monchegorsk (Murmansk Region)	42,099	JSCMMCNorilskNickel
	Zapolyarny (Murmansk Region)	15,037	
	Olenegorsk (Murmansk Region)	20,847	JSC "Olcon", JSC "Severstal"
	Vorkuta (The Republic of Komi)	58,133	JSC "Vorkutaugol", JSC "Severstal"
	Beringovskiy settlement (Chukotka Autonomous Area)	0,816	JSC "Mine "Nagornaya", JSC SUE "Chukotsnab"
	Pevek (Chukotka Autonomous Area)	4,053	LC "Gold Company "Maiskiye", JSC "Polymetal", LC "Artel of Prospectors "Chukotka"
	Severodvinsk (Arkhangelsk Region)	182,291	JSC "Northern Center of Shipbuilding and Repair", JSC "UnitedShipbuildingCorporation"
III	Norilsk (Krasnoyarsk Territory)	179,554	Polar branch of JSC "MMC "Norilsk Nickel"

The research has shown the following:

- in the Murmansk Region there are 7 mono-profile settlements, in which 19% of the region's population live (140.6 thousand people), and actually half of industrial output is produced (metallurgical industry and the related extractive industries and power engineering dominate). Kirovsk, Kovdor and Revda are included in the first category of Russian mono-towns-settlements with the most difficult socio-economic situation in conjunction with functioning problems of city-forming enterprises. The problems of socio-economic development of such settlements are connected, first of all, with the gender isolation of leading types of economic activity and high unemployment rate);

- specialization of city-forming enterprises in Onega and Novodvinsk (Arkhangelsk Region) determine low-paid employment of the population in these settlements: Onega is included in the first category of mono-towns, and Novodvinsk is in the second one, which includes mono-profile settlements that have risks of worsening of socio-economic conditions. On the contrary, the specialization of Severodvinsk, where the White Sea naval base and defense industry engineering enterprises are concentrated, led to one of the highest levels of material well-being in the region and the lowest standard of social tension in the Arkhangelsk Region;

- Norilsk (Krasnoyarsk Territory) is in the third group of Russia's mono-profile settlements. On its territory the Polar Division of MMC Norilsk Nickel operates. Unlike other Arctic mono-towns, this settlement is characterized by stable indicators of the demographic situation and labor market (*Suopajärvi et al, 2016*), as well as a high standard of material well-being of the population;

- the economic specialization of mono-settlements of the Chukotka Autonomous Area is mainly related to the gold mining industry, whose

share in the region's industrial output is about 40%. Such mono-profile settlements as Beringovsky and Pevek (4.8 thousand people) are included in the second category of Russian mono-towns, where the activity of town-forming enterprises causes certain risks in the socio-economic development of such settlements;

- the second category of Russian mono-towns also includes the town of Vorkuta (Komi Republic), on its territory the largest Russian mining enterprise JSC Vorkutaugol operates. The values of main indicators of social tension in this mono-town are significantly lower than national average ones, while the specialization of the settlement led to a high standard of material well-being in comparison with other municipal units in the region.

The Nenets and Yamalo-Nenets Autonomous Areas are of mono-profile nature, with oil production as a leading economic sector in these settlements. The largest regional oil producing companies are operating in the Nenets Autonomous Area - JSC Rosneft, LLC LUKOIL-Komi Public Association, LLC Polar Lights Company, JSC Total Exploration Development Russia, LLC Naryan-Marneftegaz Public Association. The products of such companies amount to about 90% of the Nenets Autonomous Area's total industrial output. In the Yamalo-Nenets Autonomous Area, oil and gas are produced by LLC Yamburggazdobycha, LLC Gazprom Dobycha, LLC NOVATEK-Tarkosaleneftegaz, a subsidiary of JSC NOVATEK, JSC Geoilbent, JSC Tarkosaleneftegaz, LLC Yurkharov". However, as has already been noted, mono-towns, the economy of which is based on oil and gas production, have less social problems in comparison with other mono-towns. Therefore, these regions do not have the right to the state support.

### *Characteristics of the Arctic's rural settlements*

The distinctive Arctic's feature is that not only urban settlements, but also rural ones have mono-profile nature of the economy. We have already written about this (*Samarina et al, 2019a*) and will repeat here only our main conclusions.

For most of the Arctic territories, most of the rural settlements' feature is that they engage in non-agricultural activities, including industrialization. Hence, the majority of the people are drilling workers, miners, and builders. Other settlements are associated with military-industrial complex developments, featured by armed forces personnel's service settlements, frontier posts, and military "towns." The eventuality is that only few and small villages practice agriculture and fishing, especially the indigenous people that mostly lead nomadic lives.

Another unique feature of the Arctic region's settlements is that most of the people live in closed settlements, often characterized by weapon testing ranges and large military bases. A specific example is the case of Murmansk zone that has five settlements with these features. Furthermore, there exist some specialized communities within which deported prisoners and prison employees live.

Given that the majority of the settlements in the Arctic Zone exhibit mono-functionality, the rate of unemployment remains high. With a low purchasing power, most of the people are also not able to secure better opportunities in better areas, especially in the central and southern regions of Russia. Additionally, regions in the Arctic Zone live above the isoline, which makes it unsuitable for farming or crop cultivation. The situation contributes significantly to the high rate of unemployment across the country, forcing many residents to shift to large cities and, in turn, causing a surge in urban population.

### *Social problems of mono-profile settlements of the Russian Arctic*

Social problems are closely related to the situation

on labour markets in the Arctic mono-towns. The specific feature of labour markets in mono-profile settlements is a high share of employed in material-production spheres and insufficient amount of nonproductive production spheres. The exception is the maintenance of military units deployed in the Arctic and specialized settlements as well.

For example, among the main problems of the functioning of the labor markets in the Murmansk Region's mono-towns is a discrepancy between demand and supply of labor force and its low quality; high share of youth among the unemployed; high proportion of employees providing financial and economic activity of military units, as well as medical staff of military health care institutions, communications men, food processing enterprise workers in the total number of redundant workers.

Mono-profile nature of the Nenets Autonomous Area's economy led to the zoning the district for the "rich" area, developing at the expense of redistribution of oil rent (Naryan-Mar) and "poor" ones with a minimum participating in the maintenance of oil production, in which main industries act as responsible for the employment in all regional municipal units, for the population not included in traditional types of farming or mining industry and its maintaining.

On the other hand, low professional skills of local population and the lack of specialized professional skills training keep employers from hiring local people. There are a number of problems in remote municipal units: high level of unemployment (most of the unemployed are unskilled) and the low standard of living. These problems are exacerbated because of low transport accessibility, which does not allow securing rotational employment.

In the Yamal-Nenets Autonomous Area mono-profile structure of the economy determines significant sectoral differentiation of workers according to average monthly wages. Among the major problems of labour markets development in

the municipal units is a disagreement between the list of professions for which training is given in vocational education and the labour market requirements in the district in the long term.

*Factors generating social problems of the Russian Arctic's mono-towns*

Despite the fact that the Russian Arctic's mono-towns are referred to different categories, all of them are systematically at hazard area. The growth of social problems is associated with certain factors. Some of them are inherent in all mono-towns of the Russian Federation's Arctic Zone. We call these factors objective. Among these are:

- dependence on global and Russian economic development trends;
- extreme climatic conditions;
- remoteness from Russia's financial and administrative center;
- low product line diversification;
- direct dependence of the population vital activity on the of city-forming enterprises;
- high environmental vulnerability.

Other factors are inherent only in some mono-towns and are associated with the imperfection of municipal administration. We call these factors subjective. Among these are:

- gap in social indicators of the center and peripheral mono-profile settlements;
- lack of necessary social institutions;
- imperfection of the relationship system "city - city-forming enterprise";
- lack of municipal budgetary funds for municipal social policy realization;
- low quality and insufficient quantity of skilled labor force.

To the utmost, subjective factors concerning the increasing problems are inherent in mono-towns

with a difficult socio-economic situation which belong to categories I and II.

*Main directions of solving social problems in the Russian Arctic's mono-towns*

Thus, our research shows that mono-towns of the Russian Arctic have similar social problems of objective genesis. Among the objective factors it is impossible to manage only climatic and geographical ones because their influence only needs to be taken into account when developing social policy. Such factors as "dependence on global and Russian economic development trends", "low production diversification", "direct dependence of the population's vital activity on the activities the city-forming enterprises" are changeable.

At first glance social problems of subjective genesis in mono-towns are different. But, if we analyze them more carefully, we can see they are all caused by not quite effective management. Therefore, such problems can also be resolved as well with the active state support.

We have emphasized some main universal lines for resolving social problems in the Russian Arctic's mono-towns. The implementation of measures providing these lines will allow solving both objective and subjective social problems of mono-towns of the Russian Federation's Arctic Zone.

Firstly, the realization of active employment policy, i.e. diversifying of labor market, the providing of the population's employment and self-employment. The employment policy involves the following measures:

- creating of municipal bank of vacancies, seasonal and temporary jobs;
- monitoring of municipal labour market for forecasting sectoral and qualification structure of labour demand;
- improving the system of professional orientation (formation of a system of high quality multidisciplinary specialized secondary educatio,



organization of training on probation in order to jobless citizens, job-seekers, including graduates of educational institutions, and also workers will gain operational experience in case of any threat of their mass dismissal;

- improvement the conditions and labour protection of employees, improvement of safety level in workplaces;

- housing provision (definition of methods and sources of financing the acquisition of housing, its construction in accordance with the map of population distribution) and guarantees of health and social services;

- providing with educational services (the provision of places in preschools and schools) and employment (including of migrants into the process of vocational guidance, vocational training, retraining and improvement of professional skills).

Secondly, improving the comfort of the living environment, creating comfortable living conditions taking into account the specifics of mono-profile municipal units of the Russian Federation's Arctic Zone. The following measures are involved here:

- development of civil engineering infrastructure (reconstruction of heat supply, water-supply and water disposal networks, electric power supply; put apartment houses to rights according to sanitary and engineering standards);

- ensuring of transport accessibility (enforcement of road activity concerning highways of the municipal units, arrangement of conditions for providing freight services and organization of transport service for population, providing affordable transport services, providing of transport accessibility in remote areas);

- improving the ecological situation (reduction of atmospheric emission of harmful substances, reclaiming of soils disturbed because of city-forming enterprises activities; commissioning of a solid domestic waste processing complex; construction of wastewater

treatment facilities at production areas of city-forming enterprises).

Thus, one of the main problems of most mono-profile settlements in the Russian Federation's Arctic Zone is the underestimation of social development priorities, producing disparities of socio-economic development of the Arctic regions as a whole.

Therefore, the basis of development of mono-towns in the Russian Federation's Arctic Zone is a model for sustainable development. In its framework social and economic policies should be aimed at a balanced solution of socio-economic problems of the municipal development and resource environment protection taking into account specific features of the territories of the Russian Federation's Arctic Zone.

The effectiveness of such policy suggests the realization of an integrated approach to solving problems of the Arctic mono-towns in the interaction of population, enterprises, local authorities, regional and Federal governmental authorities.

The important component of this approach is a social policy in the sphere of improving the population's material welfare in the mono-towns of the Russian Federation's Arctic Zone. The strategic objective of this policy is arrangement conditions for the development of human capital as a productive factor in economic development.

#### IV. CONCLUSION

The carried out research have made it possible to draw the following conclusions:

1. The creation of mono-towns was one of the principles of the Arctic's development in Soviet times. Nowadays, social problems in the Russian Arctic mono-towns are particularly large. This confirms our first hypothesis.

2. Among the objective factors of social problems generation of the Russian Federation's Arctic Zone it is not possible to control only climatic and geographical factors. It is necessary to take into

account their effect when developing social policy. Such factors as

"global and Russian trends of economic development dependence, low production diversification, city-forming enterprises activities population's dependence " are changeable. This refutes the authors' second hypothesis.

3. Russian Arctic's mono-towns are differentiated according to economic characteristics and, therefore, have different social problems of subjective genesis. However, there are universal management principles, aimed at solving social problems. Among these are active employment policy and improving the comfort of the habitat. Thus, our third hypothesis is confirmed.

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