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ECONOMICS, POLITICAL SCIENCE, SOCIETY AND CULTURE

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Estimation of efficiency of development of copper and gold deposits of Krasnoyarsk North¹



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Abstract. The article presents the probable approach to the assessment of the availability of the mineral deposits. This approach is specially created for initial estimation of resources and reserves of low degree of exploration. As the initial data

the most significant parameters of a deposit are used, which can be proved objectively. These parameters are valuable components in ore, volumes of ore reserves, strip ratio, mining technology. The results of preliminary economic estimation of efficiency of development of predicted gold and copper deposits of the Krasnoyarsk North are presented. Economic efficiency of development of gold deposits Nizhnelitkinskoye, Groznenskoye, and Zhilnoye are estimated. The development of copper deposits is inexpedient.

Keywords: *mineral resources, production efficiency, the probability of development, copper and gold deposits*

With the increase of efficiency of the development of potentially attractive mineral deposits, with the development of the system of licensing of subsoil use and the growth of share of private investors in the domestic mineral and raw materials complex, the need for rapid assessment tools for mineral deposits is increasing, which would promptly let to perform the assessment without time-consuming calculations, without wide range of specialists and using a large amount of initial information. Especially such methods are in demand for assessing the efficiency of field development at the early stages of stock research.

The accuracy of such estimates of the predicted effectiveness of field development is influenced, on the one hand, by a low degree of reliability of geological information on the size

¹ The research was carried out with the financial support of the Russian State Scientific Fund and the regional state autonomous institution "Krasnoyarsk Territory Fund for the Support of Scientific and Technical Activity" within the framework of the research project "Development of long-term scenarios and organizational and economic mechanisms for the development of the Arctic zone of the Krasnoyarsk Territory and evaluation of their influence on the social and economic state and dynamics of the Krasnoyarsk Territory "(project No. 16-12-24007).

and quality of the reserves, on the other hand, insufficiently substantiated and subjective economic information on the expected costs for mining and processing of minerals. The estimate is subjective because there is no formalized method for selecting of the analog field. In other words, since there are no two identical deposits and there is no method of bringing them to a "comparable type", the choice of the developed field as the analog for estimated costs of a prospective field will depend on the expert's experience, and will therefore always be subjective. In addition, the expected costs for the development of a new field, obtained by the analogy method, are not always sufficiently justified, since the information on the actual costs of enterprises related to their commercial interests is often inaccessible and unreliable.

In addition, the efficiency of the development of fields is influenced by the factors which are not directly related to the parameters of the development of specific reserves, but characterizing general conditions of subsoil use and the specific investment climate in the region. These factors often cannot be considered even at the stage of the feasibility study of field development.

The method proposed by the authors makes it possible to evaluate the probability of involving deposits in the development, based on the available geological information about the size and quality of the stocks of the aggregate deposits of this genetic type of the regional mineral resource base. With the use of the threshold availability curve (boundary probability), the calculated values of the specific operating costs for the development of deposits located at the margin of profitability can be received. This is a kind of analogue of the maximum permissible, closing costs, allowing to carry out the estimation of costs for deposits of a given genetic type of a given raw material base. In addition, the proposed method allows to consider not only the value of individual deposits, but also the effects of their mutual influence, as well as various, non-formalized social and economic factors, since the estimation of the probability of involvement in the development of a deposit is carried out against the background of other developed and reserve deposits in the region.

It seems that the developed method can make a significant contribution to the methodology for assessing the effectiveness of development in the context of limited initial data and their low accuracy at the early stages of subsoil studies.

The essence of the approach is as follows: based on the data of the State Balance of Mineral Deposits, the "reserves-maintenance" diagrams are constructed for industrial types of deposits for a given region, with the allocation of reserve and in-use facilities.

The developed and reserve deposits are allocated. Using the logit regression procedure, the function of ownership of objects to the classes of developed and undeveloped is determined, that is, the probability of involving deposits in the development (P) is determined depending on the size of the reserves and the content of useful components in the ore (1).

$$P = \frac{\exp(b_0 + b_1 \lg \alpha + b_2 \lg S)}{1 + \exp(b_0 + b_1 \lg \alpha + b_2 \lg S)}, \quad (1)$$

where b_i — the coefficients of the model; α — content of the useful component in the ore (for complex ores — the equivalent content of useful components), d. unit; S — ore reserves, thousand tons.

The coefficients of the b_i model are determined statistically based on the analysis of the distribution of the developed and undeveloped deposits within a specific regional raw material base.

The possibilities of using the approach are considered in [1, Kharitonova, M.J., Matsko, N.A., Mikhaylov, A. G; 2, Kharitonova M.Y., Matsko N.A]. This article presents the results of its application to the assessment of the efficiency of development of copper-bearing and gold-bearing deposits of Krasnoyarsk North.

Gold-bearing deposits

Using the probabilistic approach, a preliminary economic evaluation of the efficiency of development of gold-bearing objects in the North of the Krasnoyarsk Territory was carried out based on the size of reserves, content, market conditions, the current state of the gold's raw materials base in the region. The most promising projected deposits located in the southeast of Bolshevik Island were estimated. Ore deposits and gold mineralization zones on Bolshevik Island are associated with quartz veins, quartz-carbonate breccias, pyrite-laden ferruginous sandstones. Gold is of predominantly low-sulfide gold-quartz and sulphide types [3, Samoylov A.G., Vanyunin N.V., Timkin S.B.].

As can be seen from the "reserves-maintenance" diagram, made for the gold deposits of the Krasnoyarsk Territory with an open-cast mining method (Figure 1), the gold deposits Groznenskoye, Nizhnelitkinskoye, and Zhilnoye are rich and significantly superior to the rest by their main characteristics. To estimate the probability of development of these deposits, the estimated resources were transferred to the conditional category C_1 with the help of coefficients developed by Federal Agency on Subsoil Usage. The estimated probability of involvement of these deposits is 0.9, which significantly exceeds the values for other reserve deposits in the Krasnoyarsk Territory (Table 1). Estimate of costs for the development of the studied fields, performed with

use of the probability indicator of the development, showed that the specific operating costs per gram of gold are 5.6 \$/g (Groznskoye), 7.8 \$/g (Nizhnelitkinskoye), 9.3 \$/g (Zhilnoye). This will allow to achieve efficiency of development (as a ratio of price to cost) 8; 5.8 and 4.8, which is higher than the average figures for gold production in the region.

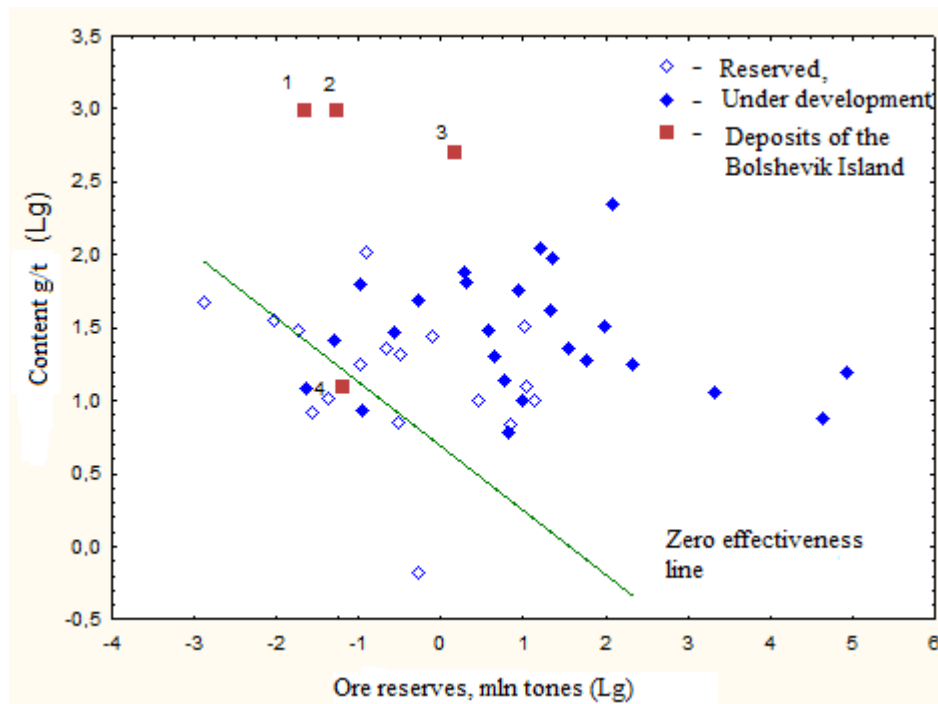


Figure 1. The "reserves-maintenance" diagram for the gold deposits of the Krasnoyarsk Territory. 1 — Zhilnoye, 2 — Nizhnelitkinskoye, 3 — Groznskoye, 4 — Izvilostoye.

Because of the simulation, it has been established that the development of the Izvilostoye deposit, whose ore reserves estimate after recalculation of the expected resources amounted to 0.3 million tons, with gold content in the extracted ore 3 g/t, is unprofitable. Expected effectiveness of the development of reserves (the ratio of the gold price to the specific operational development costs) <1, net income is negative, the costs will not be covered. In the "reserves-content" diagram (Figure 1), the point corresponding to this deposit is below zero effectiveness line.

Table 1

*Expected effectiveness of gold mining at Bolshevik Island**

Indicator	Groznskoye	Nizhnelitkinskoye	Zhilnoye	Izvilostoye
Content g/t	15	20	20	3
Ore reserves, million tons	1.167	0.281	0.188	0.3
Period of supply with reserves, years	7	5	4	5
Probability of development	0.96	0.93	0.89	0.21
Annual ore output, thousand tons	172	59	43	62
Effectiveness, MU	8.01	5.8	4.8	0.89

Operating costs per gram of gold, \$/g	5,6	7.8	9.3	50.4
Effective reserves, t	15330	4647	2971	-

* The coefficients used in calculations are ones to bring the forecasting resources to the reserves of the conditional category C_1 , recommended by Federal Agency on Subsoil Usage for all ore minerals ($P_1 = 0.25$; $P_2 = 0.125$; $P_3 = 0.0625$)².

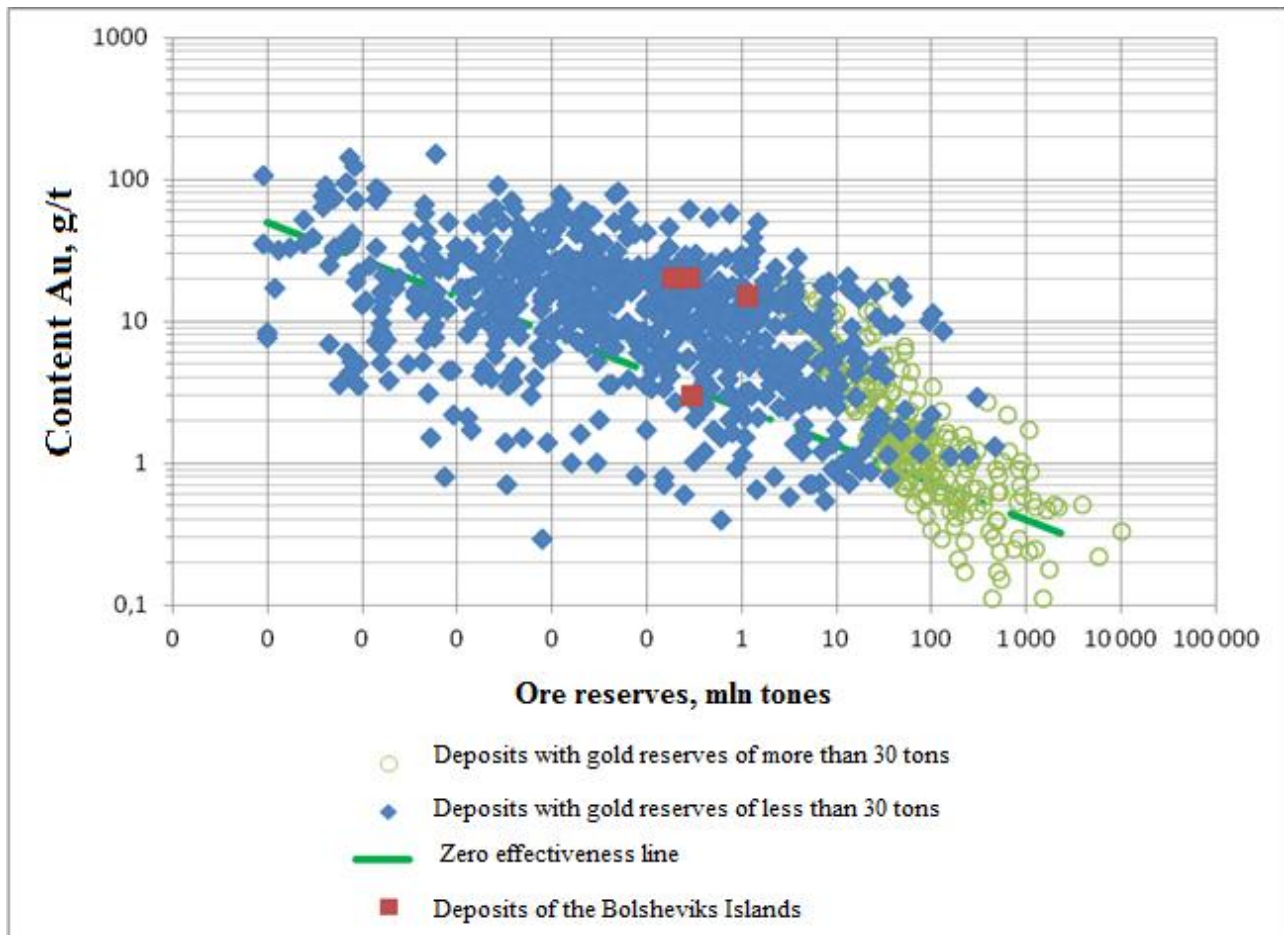


Figure 2. Gold deposits of Bolshevik Island and low-sulfide veins of the world

Considering that the level of profitability, with which the deposits are involved in the development in different regions and countries is different, it is interesting to see how the gold-bearing deposits of Bolshevik Island look like against the background of similar deposits in the world. Comparative characteristics (Figure 2) showed that the gold reserves of Groznenskoye, Nizhnelitkinskoye and Zhilnoye deposits are not large. However, their main characteristics (reserves and quality of ore) are highly competitive with the most world's lode deposits, and it is possible to say about high probability of their involvement in the development. Reserves of Izvilistoye deposit are much lower in content and against the background of the world's ones are

² Ministerstvo prirodnnykh resursov i ekologii Rossiiskoi Federatsii. Prikaz ob utverzhdenii metodiki po opredeleniiu startovogo razmera razovogo platezha za pol'zovanie nedrami ot 30 sentiabria 2008 g. № 232.

marginal effective. Because the business requirements for the profitability of projects in Russia are much higher than in other countries, its development is hardly possible.

Copper-bearing deposits

Estimation of the prognosticated copper-bearing deposits of Taimyr was carried out using the probabilistic approach by modeling the probability of development (formula 1). In Figure 3 there is a diagram for copper ore deposits in Russia. Since about half of the deposits are complex in their composition and contain other non-ferrous and precious metals as the associated components, the ordinate shows the equivalent copper content, which was calculated considering the content and price of associated useful components.

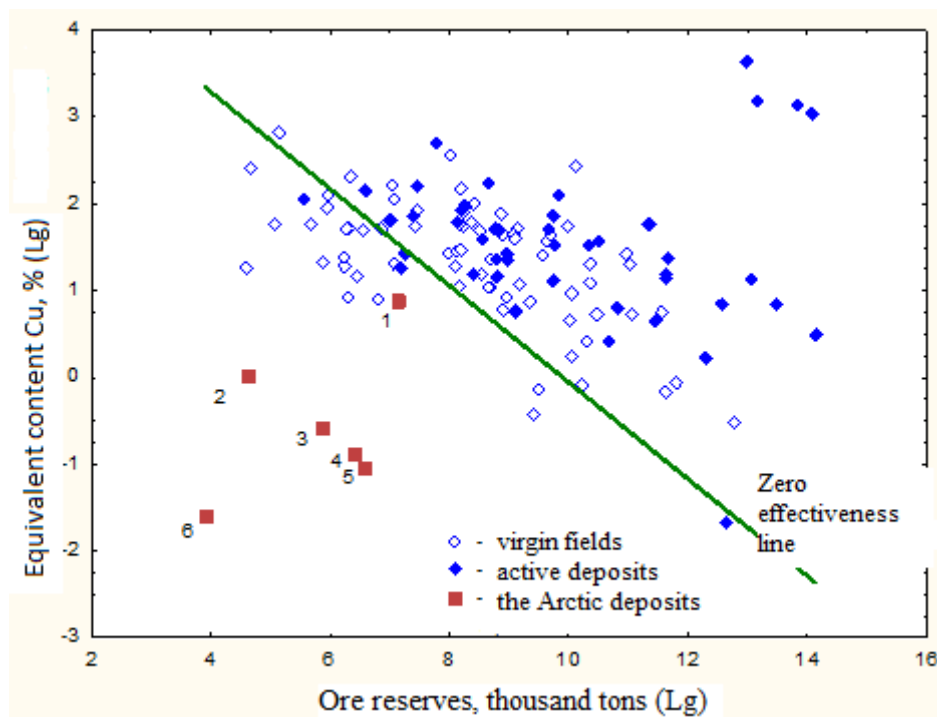


Figure 3. Copper-bearing deposits of Russia. 1 — Graviyskoye, 2 — Sukharinskoye, 3 — Imangdinskoye, 4 — Arylakhskoye, 5 — Ikechenskoye, 6 — Porfirovoye.

The following prognosticated copper-bearing deposits of the Krasnoyarsk North were studied: Graviyskoye (north-east of Igarka), Sukharinskoye (lower reaches of the Yenisei River, Sukharikha River), Ikechenskoye (Kulyumbe River), Arylakhskoye (upper Pyasina River), Porfirovovoe (In the northeast of the Mountainous Taimyr), Imangdinskoye (south-east of Lake Melkoye, the river Imangda). These deposits are below the zero-efficiency line in the "reserves-maintenance" diagram, they have a probability of developing below the boundary for this type of raw material (the boundary probability of development is 0.182). Evaluation of development of the effectiveness is given in Table 2. The efficiency of development, calculated as the ratio of the price of finished products to operating costs, for all evaluated fields is less than one. Thus, at present, with the

existing supply of reserves, the construction of mining enterprises since the Graviyskoye, Sukharinskoye, Ikechenskoye, Arylakhskoye, Porfirovov, and Imangdinskoye fields is inadvisable. Gravel deposit, with ore reserves of 1259.9 thousand tons and a copper content of 2.42%, located on the diagram (Figure 3) near the boundary efficiency line, during the change of the economic conditions (price change, the emergence of new technologies) can become cost-effective.

Table 2

Prognosticated efficiency of copper production at Taimyr fields

Indicators	Graviyskoye	Sukharinskoye	Ikechenskoye	Arylakhskoye	Porfirovov	Imangdinskoye
Content, %	2.42	1.02	0.35	0.41	0.2	0.55
Ore reserves, thousand tons	1259.9	102	725	600	50	358
Period of supply with reserves, years	6.70	3.60	5.83	5.60	3.00	4.9
Annual ore output, thousand tons	180.51	27.40	119.26	103.48	16.05	70.29
Operating costs per ton of metal, \$ / t	13 439	129 538	126 461	119 970	983 180	118 397
Total capital development costs, mln. \$	736	281	596	554	214	37
Efficiency, MU	0.52	0.05	0.06	0.06	0.01	0.06
Probability of development, MU	0.099	0.009	0.010	0.011	0.001	0.011

Conclusion

Thus, the assessment of the potential efficiency of the development of prognosticated copper and gold deposits in the Arctic part of the Krasnoyarsk Territory has showed that with the current state of the regional copper and gold resource base, only the gold deposits Zhilnoe, Nizhnelitkinskoye and Groznenskoye are promising. It can be expected that the involvement of these reserves in the development will be economically viable even against the background of other reserve deposits. Reserves of the Izvilistoye field are currently ineffective, but with the growth of gold prices or cost reductions (because of the introduction of new gold mining and processing technologies), they can become profitable in the future.

The volume of the reserves of copper deposits in Taimyr and the content of useful components in ores are much lower than the minimum acceptable values for effective development. In areas of the North where industrial, social and transport infrastructures are poorly developed, and climatic conditions are close to extreme, the capital and operational costs of developing of the deposits are significantly higher than in other regions. Therefore, the

development of small deposits of poor ores in the short term is unlikely from the economic point of view.

The conducted analysis has showed that at present there are no significant reserves of economically attractive copper and gold resources, except, of course, the Norilsk industrial area, in the Krasnoyarsk North. In this regard, the development of the territories requires the setting of large-scale prospecting and exploration works by modern methods to assess their resource potential. The relevance and role of scientific research aimed at developing of new technologies is rising. These new technologies will increase the availability of Arctic deposits and, thereby, contribute to solving of the economic, social, demographic and environmental problems of the North.

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The function of urbanonyms in language and cultural space of the city (in terms of the analysis of urbanonyms of Arkhangelsk)



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Abstract. The study investigates the lexical system of urbanonyms, the theoretical foundations of cultural linguistics, the structure of urbanonym is designated, the functions and tasks of the nomination are considered. The analysis of the names of the Arkhangelsk was carried out, and functions of urbanonyms are revealed at this database. The statement that the nomination process (creating of urbanonyms) is stipulated by several factors such as the actual linguistic, extralinguistic and linguacultural ones, was confirmed. The most important factor is the social and cultural situation. In practical terms the results of the study can be used in a high school teaching of cultural linguistics, onomastics, in practice of linguistic and cultural expertise.

Keywords: *urbanonym, the language and cultural space of the city, the types of urbanonyms, Arkhangelsk*

In cultural linguistics there is the growth of the popularity of research related to the city and urban space. They cover many modern problems and phenomena. One of the areas of these studies is the study of urban space texts. In this series there is also be the study of nominations of urban objects (urbanonyms) as a linguistic and cultural phenomenon.

Based on the analysis of urbanonyms, actualizing business and cultural objects of Arkhangelsk, we characterize the functioning of urbanonyms in the linguistic and cultural space of the city. Urbanonym in modern linguistics is the name of any inner-city object [1, Podolskaya N.V.] Urbanonymy is the aggregate of all city urbanonyms. Linguistic and cultural space of the city (which is synonymous, in our opinion, to linguistic and cultural portrait of the city) — is a fragment of an individual picture of the world of a citizen, based on his background knowledge and ideas about the language and culture of the city, the specifics of life in it.

It is not accidental that we focus our attention during collection of materials on the city center facilities, where many trading offices, cultural, sports and entertainment establishments are located (we have analyzed 1093 items). In language and culture, the urbanonym, like any other onym, realizes communication, helps to recreate the conditions of communication, and the interaction of people in general. A nominator participates in the process of creating of an urbanonym. A nominator names the city's object. A recipient perceives and interprets the

urbanonym. Thus, there are two sides in the communication process associated with urbanonyms: the naming and the perceiving. As the main regulatory macro functions, we consider the functions of socialization, information and regulation.

Under the frame of the work, the study of urbanonyms has been conducted under the prism of microubanism. Microubanism is an area in studying the urban environment, where various city details are considered, for example, graffiti, public transport routes, public spaces and modern technologies inside them, etc. Through the consideration of details, the everyday life of citizens is revealed, the state of society, cultural processes are studied [2, Zaporozhets O.N., Brednikova O.E.]. To minimize the discrepancies in the interpretation of certain concepts, we designate what is meant by the definitions:

- factor of the denotative situation – at the heart of the denotative situation there is a certain event. Within the scope of our research, such events can be: the emergence of a new organization, the relocation of an object, the renaming of an existing object, and so on. In addition, this factor allows you to see how the specific physical conditions of communication: place, time, environment, affect the shape of the urbanonym (abbreviated, renamed, etc.). For example, now the building of the puppet theater is under reconstruction, that is why it is often possible to hear from busmen the name of the bus stop "Atrium shopping center ", "Europark shopping center", although previously only the urbanonym "Puppet Theater" had the dominant position;

- communicative situation — internal conditions of a conversation, the connection of a phrase with adjacent replies of an interlocutor, the place of a phrase in the general context of the conversation. To illustrate this thesis, let us turn to the reproduction of real colloquial speech, the reconstruction of the dialogue of a busman and a passenger:

- Does the bus stop at DZ? – the passenger asked the busman.
- And what is "DZ"? – the busman asked indignantly.
- "DZ" is the shopping center "Dvinskie Zori" (Dvina dawns), – explained the third participant of the communication, the third passenger.

The abbreviation of the urbanonym here is primarily due to the law of speech economy. It is also worth mentioning about one communicative case related to the same urbanonym "Dvinskie Zori" and causing, of course, a comic effect: the remark of the busman, which is repeated many times: "Dvinskie Zori. Getting off?".

In some communicative situations, the names of intracity objects realize the above-mentioned functions, of course, in different ways: as shown by linguoculturological analysis, such micro additives as nominative, contact-fixing, accumulative (storage and transmission of cultural

traditions), axiological, intertextual, etc. can be a dominant. It seems that this list is open and can be not ultimate, universal and final, since the possibilities of interpreting of any of the linguistic forms are endless in nature.

It is necessary to mention about transitivity of the urbanonym, which is largely due to the factor of the denotative situation, discourse. Urbanonym can acquire the features of a toponym, that is, be the name of a geographical object (urban geographic objects: public transport stops, railway stations, seaports, airports). For example, the bus stop "Dieta" (Diet) was named after the nearby shop "Dieta". There is no shop for a long time already, but locals and busmen are still guided by this name.

Defining the role of urbanonyms in the linguistic and cultural space of the city, it can be noted that modern urbanonymism is strongly dependent on the features of the development of this phenomenon in previous historical epochs. In addition, urbanonyms fit organically into the urban space and meet its aspirations and realities of life, namely, the trends towards dialogue, expansion of the advertising space, and compliance with the characteristics of a market economy. In Soviet times there was a specialized store for sailors called "Albatross" (the network was present in all port cities on the territory of the USSR), it was possible to buy food and clothing there using ration currency. Today in Arkhangelsk in shops of the trading network "Albatross" you can buy mainly seafood. The name remained the same, and the speakers of the language and culture living in the Soviet times often recall what it actualized at that time, indicating that they were buying seafood at another major store "Okean" ("Ocean") (this urbanonym is now difficult to find behind other colorful advertising inscriptions of the building).

The communicative function of an urbanonym has the features distinguishing it from communication in general. Usually the speaker (or the writer) and the listener (or the reader) are involved in the communication, constantly changing during this process. In case with urbanonyms, another situation is developed: there is a writer (the nominator: the one who calls the object), who invests his thoughts, the perception of the material and spiritual world. The title reflects the modern historical era of the nominator, the sociocultural situation, and the peculiarities of the language. There is also a person reading this information (the recipient). However, there may not be an exchange of roles.

Within the framework of communication, the urbanonym realizes the informational macrofunction. Urban titles keep the information, pass it on to the recipient.

The following facts testify to the representative function of urbanonyms in the linguistic and cultural space of the city. Typical for Arkhangelsk will be the inclusion objectifying the geographical

position of the city in the name of the words. Also, the titles are popular actualizing the main location of the activity that the object is engaged in. Firstly, these are the components of the "north" – "sever" ("Severgeoservis", "Severnaya Stolitsa", "Severniy Dom" (Northern House), "Sever Grand", "Nord-oil", "Nord Lady", "Nord Stone", "Norman", etc.), "Pomorye" ("Pomorskie shtuchki" (Pomor pieces of works), "Television and radio broadcasting company Pomorye", "Diamonds of Pomorye", "Pomorsky", etc.), "Belomorye" ("Belomorye", "Kuryer Belomoryia" (Courier of Belomorye), etc.) And "Arktika" — the "Arctic" ("Arctic Group", the National Park "Russian Arctic", the Museum of Art Development of the Arctic named after A.A. Borisov, the Northern (Arctic) Federal University named after M.V. Lomonosov, etc.).



Figure 1. The urbanonym of the National Park "Russian Arctic"

The most frequency component, which is included in the Arkhangelsk urbanonyms and directly relates to the theme of the city, will be the very name of the city "Arkhangelsk". For example, the driving school "Arkhangelsk", "ArkhCity", "Arkhangelsk-Garant", "Arkhshop", "Arkhangelsk Print", "Gorod A", etc. The name of the river on which the city is located – Dvina – is less popular, for example, the bakeries "Dvinskie", "Dvina", "Dvina-tour", "Dvina-mobile". In addition, other names with marine and regional themes are quite popular. The first group includes such names as "Volna" (Wave), "Flagman" (Flagship), "Zolotoy Kompas" (Golden Compass), "Koralovy Klub" (Coral Club), "Albatross" (Albatross), "Triton" (Eft), "Gardarika". The second – the real estate agency "Gostiny Dvor" (Guest House), "Nulevaya versta" (Zero Verst), "Solovki", "Belye Nochi" (White Nights). One more popular element of the Arkhangelsk urbanonyms — the number 29 (code of the Arkhangelsk region in the Russian Federation) can be attributed to the regional component. For example, "Zemlya 29", "RegionTrans-29", "SOS prizyv 29", "Potolok-29", "Pro-29", "iCase29", "Bilet 29", "a29", "Avtomoika29.ru" etc.

All the above-mentioned groups of names are a direct reflection of the existing image of Arkhangelsk as a northern city, which is closely connected with the sea, has its own cultural features and unique history.

It is also possible to say about informativity of the urbanonyms by how many thoughts, associations, facts are born when perceived by a recipient and how this information relates to reality. To clarify the previous idea, let us consider two examples of urbanonyms: the first nomination is the "Museum of Art Development of the Arctic named after Alexander Borisov" and

the second is "Behemothic" (small hippopotamus). In the first case, we can note a high degree of informative name. It reflects the type of institution (museum), the main theme (the development of the Arctic, artistic development, the work of Alexander Alekseevich Borisov).

Receiving this information from the urbanonym, we can make an initial idea of the institution, understand what it is. The second example ("Begemotik") requires a supplement in the form of the phrase a "toy store". Otherwise, the title risks remaining unclear or even causing confusion among visitors, since any type of institution – from the grocery store to the café can have such a name.

We note the following peculiarity: the names of state institutions (which include most of cultural institutions) have greater content, rigor, and canonicity. Most often they reflect the type of institution (museum, library, exhibition hall, etc.), subjects (visual arts, folk culture, history of the region and others), departmental affiliation (region, city, etc.). That is, we can say that in most cases the names of state institutions are built according to the scheme and with the inclusion of certain components. At the same time, the names of business objects are associative, so they can be perceived from different positions.

The informative function of urbanonyms is actualized with additional information in the form of a physical address, telephone number, website and other contacts. This helps the consumer to contact the management or employees of the institution, to find out the necessary information, to report on the quality of service, to make suggestions on the work of the institution or firm. Thus, there is one more function – contact-setting (phatic) – the function of creating the feedback. Urbanonym in most cases is aimed at creating positive emotions, the mood for friendly and productive communication. The phatic function in most cases is transient, since it correlates with information and regulatory functions.

Regarding the informative function, one can note one of the problems of modern urbanonyms — the verifiability of information. This concerns several aspects of the existence of urbanonyms. First, sometimes the location of the institution and the signboard proves to be false. For example, there is a signboard with a certain name on the building, but there are no enterprises, firms or institutions in this territory. Secondly, some of the meaning of an urbanonym can be lost.

For example, earlier in the building under the sign "Chaika" (Seagull) there was only atelier, now there are many other various organizations, the whole building is called "Delovoy Tsentr Chaika" ("The Business Center" Seagull). In addition to the atelier there is also the women's fitness club Chaika. Meanwhile, the name loses its original meaning or is partially deformed, divided between different institutions, the informative value of the name is lost (desemantization

takes place). Thirdly, additional information is subject to doubt, since the address (due to moving or closing) can be changed, contact information.

The second macro function of an urbanonym is regulatory. Urban names affect a person, force him to do something or, on the contrary, forbid doing something. Regarding this function, an urbanonym could orient people in space. To describe your way from one part of the city to another, we use the names of streets, large and well-known shops, dominant buildings. The bus stops of public transport are often called not by street name, but by the name of a major shopping center, a cultural institution ("Pyramid", "High-rise", "Puppet Theater", etc.).

Relating the peculiarity of directing people, influencing their behavior, thoughts, feelings, urbanonyms closely adjoin to the advertising function. This is facilitated by the fact that the city names are creolized text, that is, they combine the language and visual means of information transfer. So, along with the text of the urbanonym on the signboard the logo of the organization or an image can be placed able to cause the necessary associations for consumers.

Urbanonym is also often a part of the header complex or part of the advertising message. For example, a sign on the building of "Detsky Mir" ("Children's World") at Pr. Troitsky, 47: "The Orenburg cobweb. Exclusive handmade products from the goat down. Palatines. Pelerins. Gossamers. Shawls. Mittens. Socks. Yarn". Next to this text there is a picture of a beautiful girl who shows a shawl. Thus, the name of the object itself is only a part of the message intended to attract consumers.

Crossing of advertising and communicative functions allows you to inform consumers about goods and services. Bright and unusual urbanonyms draw attention and arouse curiosity, thus prompting to visit the institution. The audience to which the message is directed, may become interested and get in touch with the staff of the institution, thus, the phatic function is added.

The problem associated with functions of regulation and advertising — the clogging of space with all kinds of signs, billboards, stretch marks. Large shopping centers use the external space to place signage and advertising (often located inside organizations and enterprises). These banners are covered by a significant part of the building. And since the owners of objects tend to single out their establishment from a number of similar ones, they use bright colors, graphics and photographs. The city is filled with various color spots that "interrupt" each other and do not always go together, cause a sense of disharmony, "color noise."



Figure 2. «Color noise» of the city

We suppose it is largely due to the existing restrictions on the placement of signs. On the one hand, an enterprise can be called anyhow, if it does not contain non-normative vocabulary and insults in the name and does not repeat the already existing name (the choice and registration of the name is regulated by Article 1538, 1539 of the Civil Code of the RF, as well as laws on censorship, advertising, municipal legal acts). The choice of name depends on the taste and views of the business owner, fashion, his personal experience. On the other hand, through the deformation of the linguistic norm and the language game, invective meanings are manifested occultly, so we can talk about the presence of offensive (invective) function of urbanonyms. With the help of allusions, hints, associative and precedent constructions, the owner of the institution leaves responsibility. It is difficult to prove that the sign contains something hidden indecent, but it is possible due to linguistic expertise. Examples of this type of expert material can be found on the websites of expert organizations (GLEDID, Siberian Association of Linguistic Experts, etc.).

Only the names of cultural institutions do not have such a problem, since many of them get the names from the state. These names are stricter in form and content, they do not tend to compete, although they also have the advertising text, but not on signs on the building, but in posters, leaflets, announcements, etc. This topic requires a separate study.

Arkhangelsk in terms of creating urbanonyms and their use in the urban environment is much behind the large cities. According to E. Lapina-Kratasyuk, it is almost impossible to separate the electronic and physical world¹. Modern technologies fit into the city space, are actively used not only at home or in the office, but also on the street. And, consequently, you can increasingly see QR-codes on signs, walls of houses, in advertising (they are read by mobile devices and refer to

¹ Lapina-Kratasyuk E.G. Gorodskoe prostranstvo v tsifrovuiu epokhu. URL: <https://postnauka.ru/video/32900> (Accessed: 30 May 2016).

the Internet page). In Arkhangelsk this is apparently still a single phenomenon. But QR-codes can be used as a means of "unloading" from unnecessary information, the contamination of space. QR-codes can have useful and interesting information on the streets of the city, for example, the history of the building and the place, its official and unofficial name. And thus satisfy the need of modern people in the constant supply of new information.

The socializing macrofunction is aimed at the organization of people in social communities. As you know, every urbanonym has his own target group. For example, there are urbanonyms that are clearly oriented toward parents with children (Toy Shop "Kid and Mommy", "Tiny Tot", children's clothing stores "Kinder" and "Fashionable Child", etc.) or toward people who play sports or want to go in for sports (sport nutrition shop "Sport Active", sports goods shops "Sport Market", "K4sport", etc.). In addition, this function helps a person to adapt in a society that has developed at the moment, to adjust to interacting with other people, to form a personality.

Urbanonyms also implement several additional functions operating within the communicative, informative and socializing functions. The contact-setting and advertising functions have already been mentioned, but apart from them, city names act as elements of aesthetics. Eccentric urbanonyms attract additional attention, cause positive emotions. Some nominators think about to make the name not only meaningful, but also winning, successful, memorable, because this is another method that helps to establish communication between the nominator and the recipient.

Considering the functions of urbanonyms, we came to the conclusion that they can be divided into two groups: normative and non-normative, basic — macrofunctions (communicative, informative and socializing) and secondary or facultative (phatic, advertising, nominative, aesthetic, etc.) which are realized inside the main ones. All functions are aimed at ensuring a dialogue between the nominator and the recipient; to make this interaction productive and communicatively expedient.

Urbanonyms occupy a special place in the linguocultural space of Arkhangelsk. They are an integral part of the language of the city, function in accordance with the norms of language and are influenced by intra-linguistic factors. Urbanonym in most cases appears as a creolized text that uses linguistic and visual means of expressiveness.

The following linguistic and extralinguistic factors speak about the peculiarities of the functioning of urbanonyms in Arkhangelsk: the expansion of the borrowed vocabulary, distortion of the graphic appearance of the nomination, the introduction of signs not characteristic of it, the use of means of creolization, desemantization of stable linguistic structures, linguistic

constructions, the presence of language game, the use of language tools of expressiveness, the use of precedent names, actualization of the regional component. Thus, urbanism can be called a dynamic phenomenon, which needs to be fixed, and then explored. An important feature of urban names from this point of view is the ability to grasp the cultural, social, economic and other characteristic features of the era.

Thus, the use of urbanonyms can be called a dynamic phenomenon, which needs to be fixed, and then explored. An important feature of urban names from this point of view is the ability to grasp the cultural, social, economic and other characteristic features of the era.



Figure 3. Creolized urbanonym

In addition to the functions of urbanonyms, we have identified a number of problems and peculiarities of their existence in Arkhangelsk: "clogging up" of the city with signs and advertising, the absence of a single direction for the development of urbanonyms, dialogic texts, the conformity of nominative practice with the practice of other regions of Russia.

The study we have conducted is only part of a possible comprehensive study of urbanonyms in Arkhangelsk. There are several areas in which you can continue the research. This is undoubtedly the compilation, systematization and analysis of large number of urbanonyms, as well as checking the effectiveness of manner of production of urbanonyms, which can be useful in practice for those who create urbanonyms.

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Foreign and domestic experience of economic development of the Arctic territories



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Abstract. The article deals with the key aspects of the Arctic exploration. There is a brief description of the Arctic Council, as well as strategic goals, objectives, activities and resources used of member countries and observer organizations to achieve these goals. The resource base of the Arctic region is studied. The economic analysis of the Arctic territories by circumpolar states, including the characteristics of resource projects, is arranged. The features of the Russian and

foreign approaches to the management of the economy in the Arctic are noted. The method of logical analysis, economic and statistical and historical methods are used in the research. The result is the scientific justification of advantages and potential of domestic experience of development of the Arctic, and also of the necessity of timely adaptation of economic approaches, investment policy and the legislation according to the current challenges and tendencies.

Keywords: *The Arctic, the history of the Arctic exploration, the Arctic strategies, resource base, resource extraction projects, the features of the Arctic development*

Regional development of the Arctic in the XXI century involves the inclusion in the economic turnover not only the territory of the Arctic coast, but also the water areas of the Arctic seas and the Arctic Ocean [1, Burtsev O.V., pp. 17-21], that is, the formation of the foundations of marine civilization within this regional space. Such geoeconomic development of the Arctic contributes to the expansion of Russia's geopolitical space in the traditional direction to the south and southwest [2, Kozmenko S.Y., pp. 46-49].

At the same time, it should be emphasized that the main source of the development of the Arctic region has been, as before, natural resources and, above all, hydrocarbons. The Arctic is a region with severe climatic conditions, which creates additional difficulties in the development of its expanses. The extraction of minerals is associated first of all with the problem of the lack of a proper number of technologies that would allow us to make the environmentally safe management of natural resources. However, every year, scientific and technological progress allows subsoil users to move ever deeper into the North. Understanding the goals, objectives, methods and approaches of different countries to the development of the Arctic territories let us determine the most effective of them, which ensures the use of best practices and the optimization of the whole process in order to form the basic provisions of the strategy for the development of maritime activities and the nature management economy in the Arctic [3, Kozmenko S.Y., pp. 58-63].

Key historical aspects of the study of the Arctic territories

The Arctic territories have attracted humanity since ancient times. According to some sources, the first permanent settlements of the ancestors of modern Saami in the Arctic are dated back to the 3rd-2nd millennium BC. However, in fact, the "studies" of the northern territories began only with the development of the era of navigation in the X–XII centuries.

Approximately from the XVI century the first Arctic expeditions (Willem Barents, William Baffin) started, their goal was the discovery of new sea routes in the North [4, Ksenofontova D.A., pp. 178-179]. At the beginning of the next century, the research continued, and in the north of Western Siberia, at the confluence of the river Mangazeyka in the river Taz, the first Russian polar settlement Mangazeya was founded. In the XVIII century, K.P. and D.Ya. Laptev, S.G. Malygin, V.I. Bering, S.I. Chelyuskin and other researchers, with the support of the Russian Admiralty College as part of seven detachments, carried out a number of expeditions, which resulted in the mapping of virtually the entire northern coastal zone of Russia.

The XIX century was full of English expeditions (Thomas Simpson, John Franklin, George Nars and others), when significant areas of the Canadian Arctic Archipelago were explored and a number of unsuccessful attempts to reach the North Pole were made. At the same time, Austro-Hungarian researchers K. Weiprecht, J. Payer discovered and described Franz Josef Land [5, Potaturov V.A., pp. 290-291].

In 1882-1883 the First International Polar Year was held, when 14 polar stations were organized, 12 of them — in the Arctic. Valuable meteorological, geophysical, biological and anthropological materials were obtained on the results of the Polar year.

At the edge of the XIX-XX centuries the number of studies and discoveries only grew. The ice cover of the Greenland Island (F. Nansen) was crossed for the first time, the Northwest Passage (R. Amundsen) was completely traversed by water, the North Pole (R. Piri) was reached, the Northern Sea Route was conquered (at different times by N. Nordenskiöld, B. Vilkitsky, R. Amundsen).

In 1898 the first icebreaker of the Arctic class "Ermak" built on the order of the Russian Empire was launched. The development of the Arctic airspace began. So, the Russian military pilot Ya.I. Nagursky in 1914 became the first polar pilot in the world. In 1926 (R. Amundsen) and 1928 (U. Nobile) flew over the North Pole on airships in the framework of the Arctic expeditions. In 1937 the Soviet aviators made a non-stop flight over the North Pole from Moscow to Vancouver.

From 1932 to 1933 the Second International Polar Year was held, and the work of more than 100 stations with the participation of scientists from 44 countries were organized. The

program of the Polar year included the study of magnetic storms, ionospheric conditions, meteorological phenomena, auroras and so on.

In 1937, the world's first polar research drifting station "North Pole-1" was opened in the Soviet Union. In 1933 the first icebreaker with the diesel-electric installation "Imer" was built in Sweden. Diesel-electric icebreakers of class "Wind" were built in the United States in 1942-1946. The Soviet Union in 1959 commissioned the world's first nuclear-powered icebreaker, and in 1960 the first domestic diesel-electric one. In 1977, the nuclear icebreaker "Arktika" reached the North Pole for the first time.

In 1957-1958 the International Geophysical Year was held, which is considered to be the Third International Polar Year. Already 67 countries took part in the work of the Polar year. The Soviet and American satellites were launched, radiation belts around the Earth were discovered, discoveries of underwater ocean ridges and discoveries in plate tectonics were made.

It should be noted that in XX century, in connection with the discovery of mineral deposits in the Arctic, a huge potential of the region as a large mineral resource base was discovered. So, in the 40's the Soviet Union began mining of non-ferrous metals on Taimyr and Kola Peninsulas. In the North Sea, Norway started gas production in 1971, and the United Kingdom began oil production in 1975. Since 1977, the development of the Prudhoe Bay field in the USA (Alaska) has begun.

The main areas of the strategic development of the Arctic

By the end of XX century humanity came with understanding of the enormous wealth of the Arctic region with natural resources. Estimates of the volume of mineral resources are constantly being refined, confirming the vast resource base of the Arctic. However, the process of development of these resources is constrained by a number of factors: the lack of technology for working in difficult climatic conditions, the need to preserve the ecology of the region, the unresolved issues of "property rights" in the Arctic territories and their resources.

For interethnic cooperation to coordinate issues related to sustainable development and environmental protection in the Arctic, eight Arctic countries (Canada, the United States of America, Finland, Iceland, the Russian Federation, Norway, the Kingdom of Denmark and Sweden) created the Arctic Council in 1996 — an intergovernmental forum for cooperation and teamwork to solve common Arctic issues. It should be noted that the consideration of military security issues was categorically excluded from the powers of the AC.

Nowadays the Arctic Council has eight member states that founded the organization. Six organizations representing the interests of Arctic indigenous peoples have received the status of

permanent participants. A number of non-Arctic states (France, Germany, the Netherlands, Poland, Spain, the United Kingdom, the People's Republic of China, the Republic of Italy, Japan, the Republic of Korea, Singapore and India) and non-governmental organizations have observer status. The issue of appropriation of this status is accepted by the members of the Arctic Council on the basis of an assessment of the interest of the country or organization in the development of the Arctic, as well as its potential contribution to the work of the AC.

The Arctic Council is not a full-fledged international organization, representing a discussion forum. The work of the Council is carried out within the framework of six main working groups that deal with the issues of the Arctic ecology and its sustainable development, the use of the Arctic marine environment, flora and fauna of the region, its protection from the threats of pollution from accidents. Since 2013, Secretariat of the Arctic Council has officially started working in Norwegian Tromsø, its main tasks are to provide administrative, institutional and agitational functions, as well as general support for the activities of the AC.

Working groups regularly publish the results of comprehensive research in the field of environmental and social problems in the Arctic. On the basis of the Council, important legally binding agreements were signed between its members: The Agreement on Cooperation in Aviation and Marine Search and Rescue in the Arctic signed in Nuuk (Greenland) in 2011 and the Agreement on Cooperation in sphere of readiness and response to marine pollution by oil in the Arctic signed in Kiruna, Sweden in 2013.¹

It should be mentioned that the high interest of states to the Arctic, which arose in the second half of the XX century, is currently intensifying. Thus, it is revealing that, despite the functioning of the Arctic Council since 1996, the signing of the first documents binding to its members took place only at the beginning of the second decade of the XXI century. This can also be judged by the timing of approval of strategies for the development of the subarctic states in the Arctic, which all the members of the AC have now.

Norway was the first of the Arctic powers which published in 2006 the Government Strategy in the northern regions. In 2009, the document was supplemented with the report "New structural elements in the north", which clarified the priorities and directions for the long-term. In 2011, a new strategic document, "The Far North — vision and strategy" was approved, in which the Far North and the Arctic were declared as the country's top priorities. The main provisions of the Norwegian policy are leadership in the scientific research of the North, the development of

¹ Arctic Council — main page (official website). URL: <http://www.arctic-council.org/index.php/ru> (Accessed: 28 September 2016)

mineral and biological resources, the development of the sea transport routes, the recognition of the principles of international maritime law, the creation of a full system of cooperation with the Arctic and Northern European countries, as well as the economic development of the Northern Norway. It is significant that the main factor of the Norwegian policy in the North is the cooperation with Russia.

The strategy of the Russian Federation was approved in 2008 by the document "Fundamentals of the State Policy of the Russian Federation in the Arctic for the period to 2020 and Further Prospects." Subsequently, it was supplemented in 2013 with the "Strategy for the development of the Arctic zone of the Russian Federation and national security ensuring for the period until 2020" and in 2014 with the state program "Social and economic development of the Arctic zone of the Russian Federation for the period until 2020". The key objectives and tasks of the Russian policy in the Arctic include the study of the resource base of the Arctic zone of Russia, the protection of the state border of the country, the preservation of the region's ecology, the implementation of scientific research, cooperation with the Arctic states, etc. One of the key roles in ensuring the realization of Russia's Arctic interests is allocated to the Northern Sea route as a national transport passage.

The US published the Arctic Policy Directive in 2009. The main interests are primarily the issues of internal and external security, as well as the demonstration of maritime power and the expansion of economic presence in the Arctic. It is worth noting the statement mentioned in the document about the willingness to cooperate with other states, but at the same time preserving the right of independent unilateral actions to protect their own interests [6, Bashmakova E.P., pp. 17–18]. The military, "strong-arm" approach of the US to the Arctic is due to a rather weak level of economic development of the region and a backlog from other subarctic countries on many issues, including financial support of scientific research, the state of the icebreaking fleet and so on. This approach is confirmed by the fact that the "Arctic Road Map" for the US Navy, first published in 2009, was already republished in 2014 for the period until 2030, and then updated in 2015.

Canada outlined the main areas of the strategy in the document "Canada's Northern Strategy: Our North, Our Heritage, Our Future" in 2009. These include: protecting the sovereignty of the country by building up a military presence in the Arctic, social and economic development of the North, preservation of ecology and adaptation to climate change. Canada's Arctic strategy is primarily aimed at the sustainable development of the northern territories, despite the presence of a military-political aspect.

The State Strategy of Finland in the Arctic was accepted in 2010. The main issues are the country's security, ecology, economy and infrastructure, the interests of the indigenous population and the activities of international organizations. The creation and use of new technologies for the development of the Arctic, the development of shipbuilding, the forestry and mining industry, the preservation of the country's status as an international arctic expert are important for Finland.

The strategies of Iceland (the Parliamentary Resolution on Arctic Policy), Sweden (the Swedish Strategy in the Arctic) and Denmark (the Kingdom of Denmark Strategy for the Arctic for 2011–2020) were published in 2011. In terms of key provisions, they are similar and note the important role of the Arctic Council as a consultative forum, the need to develop cooperation between the Arctic countries and support the rights of indigenous peoples. They declare the importance of ensuring security in the Arctic by civilian means, adherence to international law, preservation of the ecology and the environment, increased attention to climate change, development of the economy and trade relations, cooperation on scientific issues, search and rescue operations, and prevention of pollution.

A strategic approach to the Arctic is also expressed in official documents and actions taken by European and Asian countries that are not subarctic ones.

The strategic vision of the European Union's policy in the region is reflected in the communiqué "The European Union and the Arctic region" published in 2008. The document affirms the need to consider the Arctic issues by the international community, not just the subarctic states, the control of the European Commission over the processes of delimitation of territories in the Arctic, development of transport infrastructure and sea corridors in the region. The main partners of the EU in the issues of potential development of mineral resources are called Norway and Russia. The official website of the European External Action Service published in 2016 the key objectives and areas of the Arctic policy of the EU. The aims are the protection and preservation of the Arctic, the promotion of sustainable development of resources and the development of international cooperation.²

Germany developed the Arctic strategies in 2013 and France in 2016. The Italian Ministry of Foreign Affairs published a document "Towards the Italian strategy for the Arctic. The National priorities" in 2015, which can be considered as a prerequisite for the development of the official strategy [7, Lagutina M.L., pp. 157–158]. These documents are largely compatible with both the

² EU Arctic Policy — European External Action Service. URL: https://eeas.europa.eu/topics/eu-arctic-policy/418/eu-arctic-policy_en (accessed: 03 October 2016)

EU strategy and with each other: they are united by the main statements about the increasing significance of the Arctic for the world community, the need for rational economic development of the Arctic natural resources considering the climate change and preservation of the region's ecology, the development of scientific research and so on.

The remaining countries that are observers have similar policies for the Arctic, despite the absence of approved strategic documents.

The interests of European countries — the UK, Spain, the Netherlands, Poland — include the development of the energy sector (participation in hydrocarbon production), the possibility of free scientific research (primarily on climate change issues), maritime shipping and bioresources, and military interests.

Asian countries — China, Korea, Japan, India, Singapore — defend the following interests in the Arctic: scientific research (environment and climate change research), economic (participation in development of resources, use of sea routes, shipbuilding and construction of port infrastructure), geopolitical (including the improvement of international law) and military ones [8, Zhuravel V.P., pp. 113–141].

The economic development of the Arctic by the subarctic states

The resource potential of the Arctic region primarily contributes to the development of strategic approaches to the development of the region despite the importance of geopolitical, climatic, environmental and scientific research issues.

Currently large reserves of hydrocarbons have been discovered in the Arctic, as well as metal ores, coal and other minerals, and significant biological resources. According to the conducted research, the explored reserves of hydrocarbons in the Arctic make up 233 billion barrels of oil equivalent (o.e), the estimated volume of unexplored reserves is about 413 billion b.o.e. Total — 646 billion b.o.e., which is about the fifth part of the world's hydrocarbon reserves, while 73.8% of this volume falls on natural gas. It should be noted that 65% of oil (without gas condensate) in undeveloped reserves is accounted for by the North American Arctic zone, 17% — by the Russian Arctic. About 70% of unexplored gas reserves are concentrated in the Arctic zone of Russia. World Energy Agency study noted in 2009 that from 61 opened oil and gas fields, 43 are in Russia, 11 in Canada, 6 in the United States and 1 in Norway. At present, about 10% of oil and 25% of natural gas from the world level are extracted behind the Arctic Circle [9, Shvets N.N., pp. 61–63].

Large reserves of coal, copper, nickel, gold, wolframite, iron, and uranium are concentrated in the Arctic. In the north of Russia, the deposits of the following minerals are developed: copper,

nickel, cobalt, apatite concentrates, zirconium, phosphorus on the Kola Peninsula; In Western and Central Siberia — gold, nickel, molybdenum, zinc, coal, diamonds; In the Republic of Sakha (Yakutia) — diamonds (about the quarter of the world's mining), tin, gold. In Canada (Yukon) gold, quartz and coal are mined. The United States (Alaska) develops coal, lead and zinc. Coal, zinc, silver, cryolite, lead and marble are mined in Greenland, and Norway is the largest producer of magnesium and aluminum in Europe [10, Selin V.S., pp. 28–53].

The biological resources of the Arctic are also significant. About 20% of fresh water is concentrated in the region, the flora and fauna here are unique, and large populations of commercial fish live in the seas.

According to experts, about half of the unexplored US oil reserves (approximately 30 billion barrels) are concentrated in the state of Alaska on the territories of the National Oil Reserve and the National Arctic Reserve, as well as on the continental shelves of the Beaufort Sea and the Chukchi Sea. In 1977 the development of the Prudhoe Bay deposit in the borough of North Slope began. The companies Sohio, Exxon and Arco produce about 8% of the oil from the national average in Prudhoe Bay, which is transported along the Trans-Alaska oil pipeline, almost 1,300 km long, to the port of Valdez on the southern coast of Alaska, from where it is delivered by oil tankers to oil refineries in the United States. The infrastructure of the pipeline can be used in the future to transport oil extracted in the Beaufort Sea. In borough Northwest Arctic since 1987, the Red Dog mine is being developed with the largest reserves of zinc in the world. Here, about 10% of zinc from the level of global production is extracted, as well as lead. According to the US Census, the number of people living in Prudhoe Bay varies between 2000–10000 people, depending on season. Almost all residents of the settlement are engaged in the production of hydrocarbons, living in Prudhoe Bay with long alternating shifts. The work of the Red Dog mine is provided by more than 630 people.

Important hydrocarbon deposits in Canada are found in the Mackenzie Delta region, the Beaufort Sea basin and the Canadian Arctic Archipelago. The most active development of these resources was carried out in the 70–80's of XX century, supported by rising oil prices and government support. Since that time about 90 wells were drilled in the Beaufort Sea, about 37 wells — on shelf.

After a significant break at the end of the first decade of the XXI century, the volume of geological exploration started to increase, including those carried out by Chevron and Statoil. Since 1997, Exxon Mobil has been producing oil at the Khyberniya field in the east of Newfoundland. In the same area, the development of Terra Nova and White Rose deposits is

being carried out — oil is extracted using a floating, storage and unloading (FPSO) vessel. Personnel is involved in shifts to work on oil platforms and vessels.

Geological exploration of oil fields in Greenland in the 70's of the XX century showed no prospects for profitable production. Only in 2010, Cairn Energy first discovered hydrocarbons, prompting Greenland to issue the first licenses for exploration of gas and oil fields offshore purchased by Cairn Energy, Shell and Statoil. However, despite the significant probable potential of the region, oil production is restrained by its high costs with reduced prices for petroleum products. Geological exploration of diamond, zinc, molybdenum and gold deposits is also carried out in the region.

The extraction of hydrocarbons in Norway is carried out mainly on the continental shelf in the Northern, Norwegian and Barents Seas. The main volume of the exploration work since the 80's. of the XX century is carried out by Statoil. The largest deposits are the developed fields of Heydrun (since 1995) and Snøhvit (since 2007) and promising ones are: named after Juhan Kastberg (renamed Skrugard and Havis), Ormen Lange and others. As the deposits are in the water area of the seas, oil products are extracted mainly using oil platforms. The Italian company Eni in cooperation with Statoil in 2016 began oil production in the Barents Sea with the help of the world's largest offshore oil platform Goliath. The functioning of oil platforms is provided by labor resources working in shifts.

Since the late 40s. of the XX century, sulphide copper—nickel ores are mined on Taimyr Peninsula. The Polar division of Norilsk Nickel stably holds the world's first places to produce palladium and nickel, and produces platinum, cobalt and copper. Norilsk residents are working in factories and concentrating factories — the most northern city with a population of more than 150 thousand people. Large reserves of iron and copper-nickel ores, aluminum and rare metals, nonmetallic and mining chemical raw materials are discovered on Kola Peninsula. The extraction of minerals began already in the first half of the XX century. The largest companies extracting natural resources are JSC Kola MSC (nickel, copper, cobalt concentrate), JSC Olkon (iron ore concentrate), JSC Apatite (phosphate raw materials) and JSC Kovdorsky MPW (apatite, baddeleyite and Iron ore concentrates). These enterprises are city-forming for the cities of Apatity, Monchegorsk, Kirovsk, Olenegorsk, Kovdor, Zapolyarny and Nikel.

The largest oil and gas bearing regions in the Russian Arctic are the East Barents, South Kara, Laptev, East Siberian and Chukotka Autonomous Region. At the same time, main volume of the hydrocarbon reserves is concentrated in the western sector of the Arctic zone of Russia, and the undiscovered reserves of the eastern sector are mainly classified as conditional and inferred.

One of the largest gas-condensate fields in the world is discovered on the shelf of the Barents Sea — Shtokman, which reserves are 3.9 trillion m³ of gas. The development of the field was planned by Gazprom together with Total and Statoil. However, now the project is suspended due to changes in the world gas market.

Based on South Tambey field on Yamal peninsula, the Yamal LNG project is being implemented, which provides the production of up to 16.5 million tons of LNG per year when it reaches its full capacity in 2019. The project operator is a joint venture NOVATEK, Total, CNPC and Silk Road Foundation. The transport infrastructure is created as part of the project in the region, as well as the infrastructure of the Sabetta field camp (with a peak number of employees of up to 15,000 people). NOVATEK is also developing other deposits in the region with the aim of the subsequent planned launch of a series of three projects Arctic LNG.

In the south-east part of the Yamal Peninsula, Gazpromneft is producing Novoportovskoye oil deposit, with recoverable reserves of more than 250 million tonnes of new sort oil Novy Port. Transportation of raw materials is carried out by pipeline to the coast of Gulf of Ob, where further shipment is arranged with the help of the Arctic oil terminal "Gates of the Arctic" to tankers carrying out subsequent transportation by sea. Work of the personnel within the framework of the project is carried out on a shift basis.

Conclusion

The territory of the Arctic was initially developed regarding commercial and, less often, trading interests. Since the XVI century the first research expeditions began to determine which territories were in the North, and whether navigation was possible there. With the course of time, the scientific interest of expeditions intensified. Mariners and researchers set more and more ambitious goals, and closer to the end of the XIX century the competition for achievements in the Arctic between representatives of different countries began. Technological breakthrough of the XX century allowed to significantly accelerate the pace of exploration of the Arctic and opened the raw material potential of the region.

The development of the natural resources of the Arctic began in the first half of the XX century, but the active growth of this process occurs only from the end of the XX century to the beginning of the 21st century. The largest share in the structure of extracted minerals in the Arctic zone is occupied by hydrocarbons. Other mineral resources are also mined in the region, including metal ores, coal, nonmetallic and mining chemical raw materials. The use of new technologies, profitability of extraction, safety for the environment can be called as the main principles of the integrated approach to the development of the Arctic resources.

Relating to the growing interest to the Arctic region, primarily because of its resource potential and the impact of climate change, the world community in the late XX — early XXI centuries began to give the Arctic more and more attention. The subarctic states have established international organizations to jointly solve key issues in the region. Following their own interests, the countries remoted from the Arctic become participants in the work of these organizations. To realize their interests, states develop the Arctic strategies that contain information on the main goals, tasks, activities, resources used to achieve them, and so on. The main issues on the agenda are the issues of economic development of the Arctic in difficult climatic conditions with the need to preserve the ecology. And the lack of industrial technology and climate change are incentives for the development of scientific research.

Most of the subarctic states consider the development of the Arctic as one of the strategic goals, including the social and economic well-being of the region's population. The economic development of the Arctic territories has already been implemented by all these countries. The greatest experience in conducting economic activities in the Arctic was made by the Soviet Union (which was the first in the 1940s which started mining operations in the region) and its successor, Russia. The remaining subarctic states joined this process only in 1970s – 1980s. At the same time, only Canada among them initially led the "civil" development of the Arctic space, and for the United States and European countries the provision of a military presence in the Arctic was the initial goal. The USSR deployed military forces in the region in parallel with its economic development.

The Russian Federation, in addition to extensive experience in the development of Arctic fields, has considerable experience in operating the icebreaking fleet (the largest), including the world's only nuclear icebreaking fleet.

It is revealing that about half of the population of the Arctic zone lives on Russian territory. This is largely due to the legacy of the Soviet approach to the development of the Arctic associated with the foundation and development of single-industry towns inhabited by the labor force permanently residing on the territory to ensure the mining of minerals and the functioning of military bases. The countries of Europe and North America (primarily Canada) mainly use the principle of "development without settling", when the development of deposits is provided by the shift method, and only the indigenous population in the Arctic resides there permanently.

Thus, the domestic experience of conducting the Arctic economy has the significant advantages and reflects the high competitive potential of the Russian Federation. However, the preservation of these advantages over the western countries is possible only with the timely

adaptation of approaches to the development of the Arctic, investment policy and legislation in accordance with current challenges and trends, as further advance to the north will be provided primarily through the modernization of existing production processes and the discovery of fundamentally new technologies.

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Features of the dynamics of prices for agricultural products of the northern countries



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Abstract. Price dynamics for agricultural products of the northern countries is determined by many factors. The methods of economic and mathematical analysis of the dynamics of prices for agricultural products of the northern countries have allowed to identify trends, seasonal and cyclical processes. The dynamics of prices

from 1991 to the present time there are two long opposite trends. Cyclic processes have a duration of 2–4 years. Seasonality in change of prices is sustainable due to natural biological processes under the influence of climatic factors. Correlation analysis of price series for agricultural products of the northern countries has showed connection of high strength, confirming the presence of trends and periodic components under the influence of the common factors. Short-term price dynamics approximation shows the retention of the increasing price trend.

Keywords: *food security, economic and mathematical analysis of the dynamics of prices of agricultural products, the opposite trends, seasonal and cyclical processes, the correlation of time series of prices, approximation*

Introduction

The basis of food security of any country is developed agriculture and agro-industrial production, providing the population's needs for food. But for most countries, the agricultural sector is an industry with low profitability of production and with large and long-term investment costs. The innovative vector of industrial development with high-tech and science-intensive industries in European countries also exerts pressure on the agrarian sector of these countries [1, Metelkina N.K.]. Moreover, developed European countries are the indicator of international structural economic changes with the growth of the share of services in the gross national product and the decline in the share of agriculture. Today, in the structure of the gross output of the northern countries (Sweden, Norway, Finland, Denmark, etc.), the share of agriculture together with the extractive industry is in the range of 2–4%¹. The exception is Iceland, where, due to intensive development of sheep breeding and fishing, the agricultural and extractive industries reach 15% of the total volume of gross production [2, Phillipova O.B.]. But the extremely severe conditions of Iceland do not allow to farm.

¹ Polozhenie del v oblasti prodovol'stviia i sel'skogo khoziaistva — 2015. Sotsial'naia zashchita i sel'skoe khoziaistvo: razorvat' porochnyi krug nishchety v sel'skikh raionakh. URL: <http://www.fao.org/3/a-i4910r/index.html> (Accessed: 21 January 2016).

In addition, in modern terms of economic globalization, there is the increase in interstate competition in the agricultural market. Fluctuations and mounting tension in agro-industrial markets primarily affect negatively the countries dependent on imported agricultural supplies. Thus, due to low positive temperatures and a short agricultural season, the northern countries cannot fully meet their own needs in cereals, fruit and vegetable crops. The border zone for the cultivation of many important cereal crops is Norway², where the reproduction of juicy forages has become the basis of plant growing. Severe natural conditions determined the development of the livestock sector with the simultaneous increase in the cultivation of forage grains in the northern countries.

These trends in the world economy, together with the natural climatic and environmental constraints of the northern countries, become serious challenges for the development of the agricultural sector, which is the basis of the country's food security and the well-being of the population [3, Sizova T.M.]. Therefore, for the northern countries with a small population, the intensification of agriculture becomes a state policy aimed at improving the country's food security in the long term.

Bearing in mind the price growth for most agricultural products on the world market, we conducted a study of the dynamics of prices for agricultural products of the northern countries.

Methods, objects of research

The subjects of the study are northern European countries: Sweden, Norway, Finland, Denmark, Iceland and Canada. For the current analysis, a database of European prices for agricultural products was formed for the period from 1991 to 2015. Information on prices of agricultural products in the northern countries was based on data from international statistical organizations: FAOSTAT³, Indexmundi⁴.

The objects of research are prices for the main types of agricultural products. For the agriculture sector, three groups of time series of prices have been developed: cereals, vegetables and fruits. The share of the study of trends in the livestock sector is built sampling the prices of milk, eggs and two kinds of meat.

At the initial stage of the study, the methods of empirical research (observation, comparison, measurement) were used with observance of the basic requirements: activity, conformity to plan, regularity, which allowed to systematize the primary information for the

² Polozhenie del v oblasti prodovol'stviia i sel'skogo khoziaistva — 2013. URL: <http://www.fao.org/3/a-i4910r/index.html> (Accessed: 10 January 2016).

³ FAOstat. URL: <http://faostat.org/> (Accessed: 21 January 2016).

⁴ IndexMundi. URL: <http://www.indexmundi.com> (Accessed: 20 February 2016).

subsequent stage of the study. Further, various methods of economic-mathematical and statistical analysis were used [4, Kremer N.Sh., Putko B.A; 5, Liventsev N.N.]. Statistical analysis included calculation of basic and chain indicators of price dynamics. Economical and mathematical methods were used to determine the structure of price dynamics: dispersion, correlation, regression analysis. At the last stage of the study, additive models of time series of prices for agricultural products of the northern countries were developed.

The results of the study

The autocorrelation analysis of the dynamic series of prices of agricultural products in the northern countries made it possible to reveal the structure [5, Liventsev N.N.]. For time series of prices of agricultural products, the correlation coefficients from the first order to the 4th order between successive levels of the same price series were calculated. Having calculated several autocorrelation coefficients and the autocorrelation function, we determined that the time series contain a tendency and oscillations with certain periods (Table 1).

Table 1

Private coefficients of autocorrelation of time series of meat prices

Type of agricultural products	Coefficient			
	1st order	2nd order	3 rd order	4 th order
Chicken Meat Sweden	0.91	0.81	-0.51	0.31
Chicken Meat Norway	0.89	0.81	0.47	0.28
Chicken Meat Finland	0.82	0.71	0.41	-0.21
Chicken Meat Iceland	0.84	0.73	0.51	0.19
Chicken Meat Denmark	0.87	0.75	-0.38	0.35
Beef meat Norway	0.91	0.84	0.41	-0.27
Beef meat Finland	0.95	0.86	0.39	0.26
Beef meat Iceland	0.87	0.77	0.42	-0.19
Beef meat Denmark	0.88	0.82	-0.29	0.30

The empirical analysis of the initial series of prices showed that there are multidirectional trends in price dynamics (Figure 1).

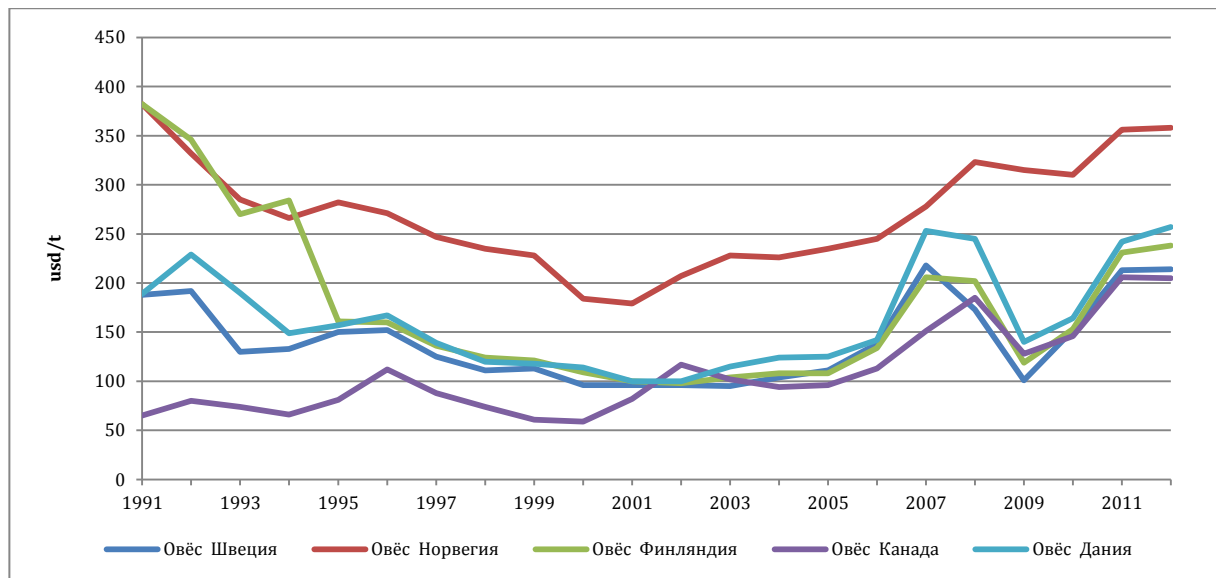


Figure 1. Dynamics of prices for oats from 1991 to 2012
 URL: <http://www.indexmundi.com> (accessed: 20 February 2016)

The calculated correlation coefficients have positive and negative values (Table 1), which indicates the presence of increasing and decreasing trends in the series levels, therefore it is not possible to make an unambiguous conclusion about the nature of the trends, additional calculations are needed. The study of the trend component of time series of prices required the ungrouping and separate analysis of the trend components of time series of prices (Figure 2).

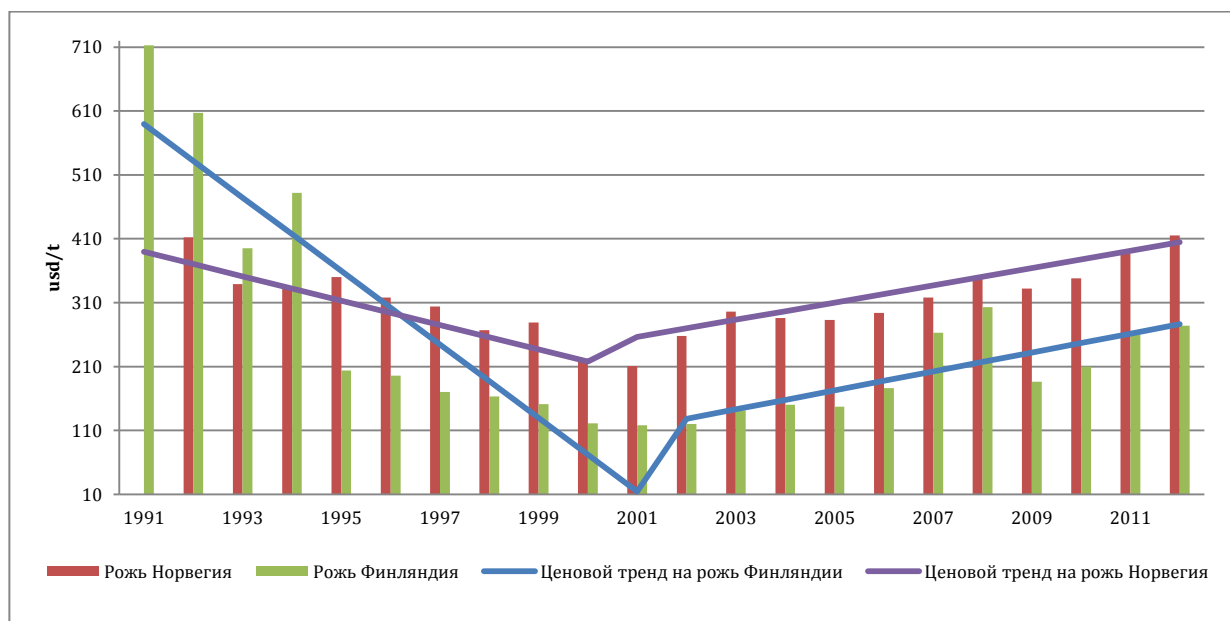


Figure 2. Trends in the dynamics of rye prices from 1991 to 2012
 URL: <http://faostat.fao.org/> (accessed: 21 January 2016)

Virtually all the studied cereal species contain two differently directed long-term trends in the price movement. A decreasing trend is observed in the period from 1991 to 2002, after which there is an increasing trend (Figure 1 and 2). The analysis of the dynamics of price series showed that a characteristic feature of the movement of price trends of cereals is that by the present time

the cost of most types of cereals in Sweden and Norway is close to or slightly higher than the price level of 1991 (Table 2).

Table 2

Change in prices for cereals in the northern countries⁵

Country	Type of cereals	Price, usd/t		Absolute price change, usd/t	Relative price change, %
		1991	2014		
Sweden	Rye	198	270	+72	136.4
	Wheat	196	290	+84	148.0
	Barley	197	260	+63	132.0
	Oats	188	224	+36	119.1
Norway	Rye	420	424	+4	101.0
	Wheat	493	474	-19	96.1
	Barley	426	412	-14	96.7
	Oats	382	375	-7	98.2
Finland	Rye	713	285	-428	40.0
	Wheat	550	275	-275	50.0
	Barley	392	245	-147	62.5
	Oats	382	256	-126	67.0
Denmark	Barley	191	286	+95	149.7
	Oats	189	273	+84	144.4
Canada	Rye	53	259	+206	488.7
	Wheat	86	274	-188	318.6
	Barley	65	257	-192	395.4
	Oats	66	221	-155	334.8

Exceptions are Finland and Canada. In Finland, cereal prices today are more than two times lower than in 1991. This feature can be explained by a decrease in crop production in severe climatic conditions and the reorientation of agriculture to livestock development. Currently, cereal crops do not make more than half of the cultivated area, and about 25% of the land is forage grass, which is sown on permanent pastures or in the order of crop rotation⁶. There are also changes in the structure of production of grain crops. In Denmark and Sweden, the sowing of wheat and rye is gradually increasing, which grow well on acidic sandy soils. Prices for cereals in Canada by 2014, by contrast, increased significantly compared with 1991. Among the main factors of rising grain prices are improvement in the quality of North American grain, the weakening of the Canadian dollar, globalization of the world grain market [6, Noskova I.Ya., Maximova L.M.].

It should be noted that the level of prices of cereals varied greatly between countries fifteen – twenty years ago (Figure 1, Table 2). The lowest prices for grain were observed in Canada. At the present stage, grain prices in Finland, Sweden, Denmark and Canada are quite close. For example, the prices for rye are in the range of 260–290 USD/ t, for barley — no higher than 260 USD/ t, for oats — from 220 to 275 USD /t. The highest prices for cereals are kept by Norway, as

⁵ FAOstat. URL: <http://faostat.fao.org/> (Accessed: 21 of January 2016).

⁶ Ekonomika Shvetsii. Shvetsiia v mirovoi ekonomike URL: <http://www.gecont.ru/articles.php>

cereals, as already mentioned above, are mainly imported, so their cost increases by the amount of duties and logistics costs.

Annual price fluctuations are associated with changes in crop yields due to weather conditions and the volume of arable land, as agricultural production is a biological process. Significant seasonal processes are revealed in the dynamics of prices for cereals. The average indicators of the seasonal component of time series of prices are presented in Tab. 3.

Table 3

Change in the seasonal component of time series of prices (as an example of the price of oats)

	January	February	March	April	May	June	July	August	September	October	November	December
Sweden	+8.6	+30.2	+44.4	+47.8	+57.2	+15.7	-0.7	-4.08	-16.5	-15.9	-14.9	+0.6
Denmark	+10.6	+20.2	+34.4	+37.8	+37.2	+5.7	-0.2	-5.08	-14.5	-18.9	-19.9	+0.2
Finland	+11.6	+21.2	+24.4	+27.8	+31.2	+15.7	-0.1	-7.08	-19.5	-20.9	-21.9	-0.6

Eliminating the trend component and seasonal fluctuations in the dynamics of grain prices, we have identified cyclical processes (Figure 3). Cyclic fluctuations in the dynamics of prices for agricultural products have different duration and amplitude of changes. The cycle duration in most of the time series under study is 2–4 years. At the junction of the trend change (2000–2002), the amplitude of the cycles decreased, so the cycles are not expressed (Figure 3).

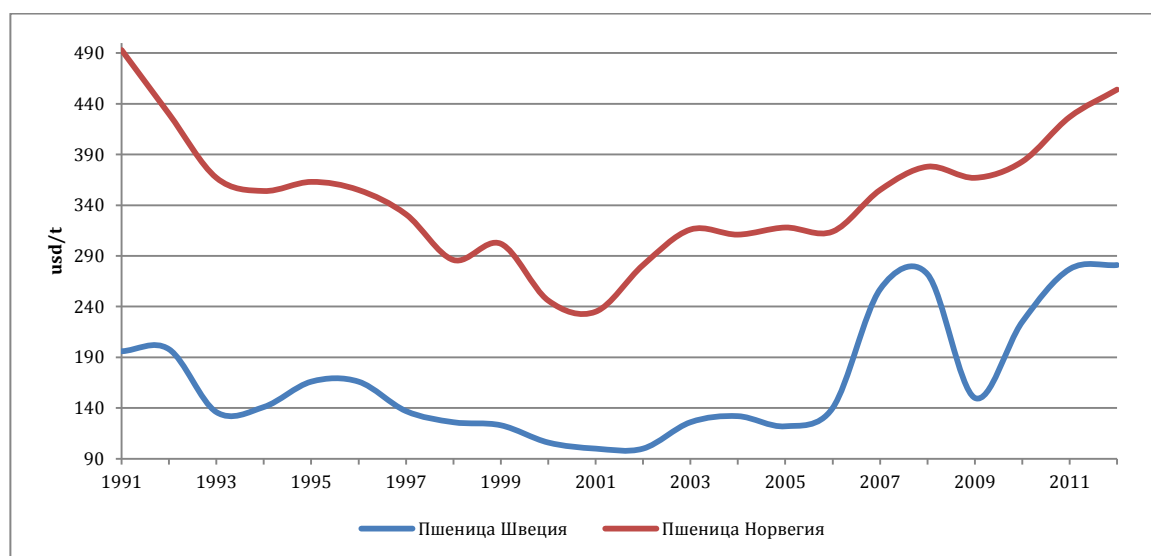


Figure 3. Wheat price dynamics cycles from 1991 to 2012
URL: <http://www.indexmundi.com> (accessed: 20 February 2016)

The dynamics of prices for fruits and vegetables of the northern countries also decreasing and increasing trend are revealed (Figures 4, 5), except for the prices of North American fruits and vegetables, which were kept at the same level until 1997–1998. For example, the price for apples in Canada was about 220–250 dollars/t, and for strawberry up to 1550 dollars/t. Then the period

of equilibrium was replaced by a rise in prices, which by the current period increased almost 2–2.5 times to the level of 1991 (Figure 4).

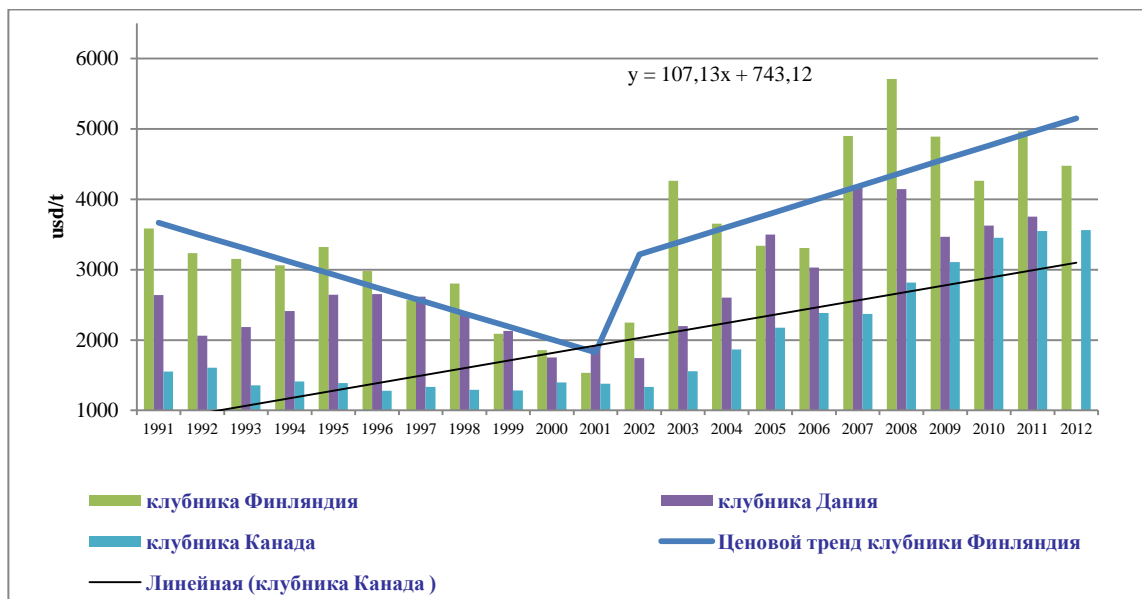


Figure 4. Dynamics of prices for strawberries from 1991 to 2012.
URL: <http://faostat.fao.org/> (accessed: 21 January 2016).

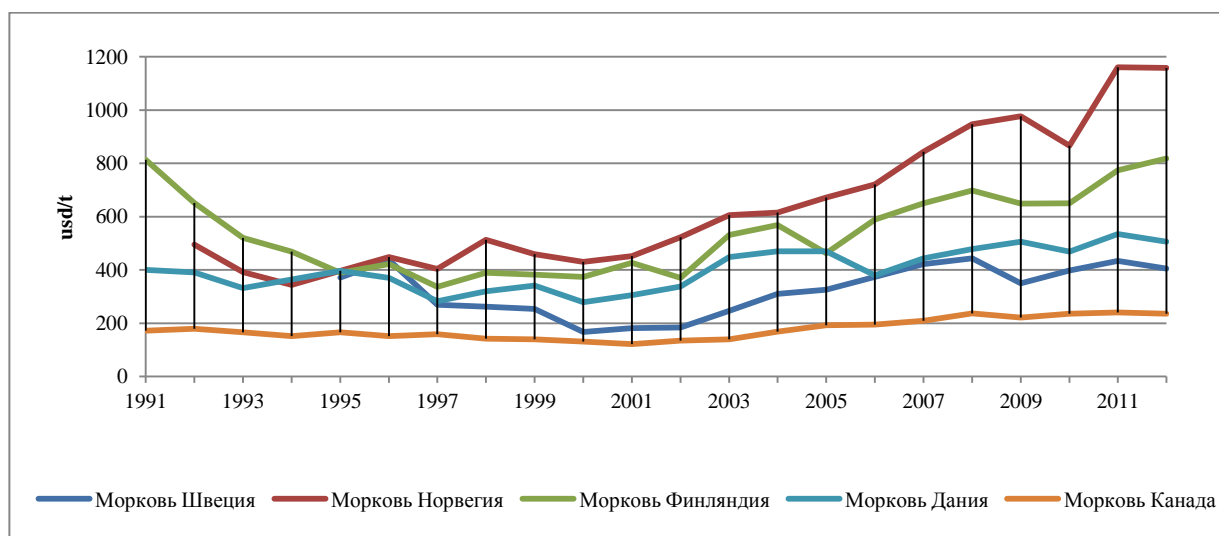


Figure 5. Dynamics of prices for carrots from 1991 to 2012
URL: <http://faostat.fao.org/> (accessed: 21 January 2016)

Prices for fruits and vegetables today are much higher than in 1991 in all northern countries (Figure 6, Table 4).

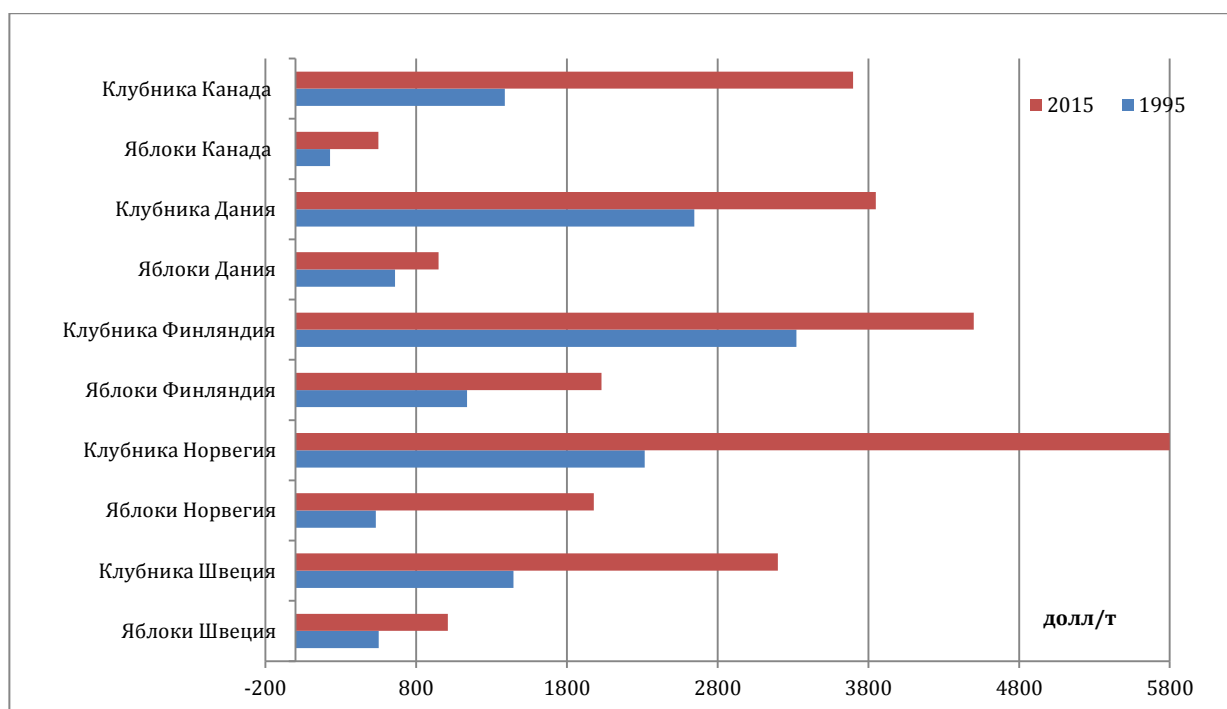


Figure 6. Change in the price of fruit in 1991 / 2015 r. URL: <http://faostat.fao.org/>. (accessed:21 January 2016).

Table 4

Change in prices for vegetables in the northern countries⁷

Country	Type of vegetables	Price USD/t		Absolute price change, usd/t	Relative price change, %
		1991	2014 г.		
Sweden	Carrot	371*	430	+59	115.9
	Courgettes	209*	350	+141	167.5
	Cucumbers	1143*	1900	+757	166.2
	Tomatoes	1143*	1660	+517	145.2
	Potatoes	277	340	+63	122.7
Norway	Carrot	396*	1250	+854	315.7
	Courgettes	543*	1300	+757	239.4
	Cucumbers	1645*	3010	+1365	183.0
	Tomatoes	2049*	3600	+1551	175.7
	Potatoes	356	480	+124	134.8
Finland	Carrot	814	850	+36	104.4
	Courgettes	398	-	-	-
	Cucumbers	1954	1850	-104	94.7
	Tomatoes	2275	2300	+25	101.1
	Potatoes	242	220	-22	90.9
Denmark	Carrot	400	520	+120	130.0
	Cucumbers	335	1530	+1195	456.7
	Tomatoes	1252	1600	+348	127.8
	Potatoes	257	180	-77	70.0
Canada	Carrot	172	280	+108	162.8
	Cucumbers	292	650	+358	222.6
	Tomatoes	159	230	+71	144.7
	Potatoes	134	300	+166	223.9

Note * — price of 1995.

The rise in prices for vegetables and fruits is also connected with an increase in demand for healthier food and changes in consumer tastes due to the impact of mass media, the results of

⁷ FAOstat. URL: <http://faostat.fao.org/>. (accessed: 21 February 2016).

scientific research, the advertisement of useful and medicinal qualities of vegetables and fruits⁸. Another factor in the growth of the consumption of fruit and vegetable products is the improvement of the technology of storage, transportation and packaging of grown products, which can maintain quality and presentation for a long time after harvest, and consumers have the opportunity to have fruits and vegetables all year round. New storage technologies are based on the use of modified gas environment and artificial cold, regulation of air pressure and ventilation, chemical treatment, application of protective packaging, etc. Advanced technologies of agricultural technology and selection also allow to grow many types of vegetables and fruits even in harsh conditions of northern countries. But such technologies significantly increase the cost of vegetables and fruits, which can be clearly traced in the dynamics of prices for many types of crop production. Significant increase of prices for vegetables occurred in all northern countries, but the highest rates were recorded in Norway, where prices for many types of vegetables are 1.5–3 times higher than in 2001 (Table 4). For a long time, with the support of the state, scientific research has been carried out in the field of breeding of new breeds of livestock on the basis of genetic achievements. The increase in organic crop production and animal husbandry has become the important area in the development of agriculture in the northern countries, which is based on environmentally friendly methods and production technologies.

So, today in Norway there are about 4 thousand farms out of 46 thousand (according to the Norwegian statistics), which use organic methods and technologies [3, Sizova T.M.]. The development of organic farming is fully supported by the government of Norway, Sweden, Finland. Two areas among the support measures are interesting: subsidizing of farms and financial support for organizations of organic movement⁹.

In European countries, the growth of the income level of the population has a big impact on the price dynamics, which means that this market becomes attractive for foreign producers, and due to the active development of international trade, imported vegetables and fruits occupy firm position in the agro-industrial markets of the northern countries, while consumers have access to a wide assortment and variety of products.¹⁰

A positive aspect of the expansion of international trade in agricultural products is the fact that seasonal production or changes in product yields due to weather conditions are offset by

⁸ Tendentsii proizvodstva i potrebleniia ovoshchei. URL: <http://www.fruit-inform.com/ru/marketing/research/17411#.VtMozU1f1D8> (Accessed: 21 January 2016).

⁹ Tendentsii proizvodstva i potrebleniia ovoshchei. <http://www.fruit-inform.com/ru/marketing/research/17411#.VtMozU1f1D8> (Accessed: 21 January 2016).

¹⁰ OON predrekaet mirovoe udorozhanie produktov. URL: <http://www.pravda.ru/economics/agriculture/22-06-2010/1037487-news-0> (Accessed: 21 February 2016).

import deliveries, and consumers do not lack vegetables and fruits. But the disadvantage of international trade is that with significant reductions in the harvest of local vegetables and fruits, prices for imported products start to increase, as a result of a fall in domestic supply. Trying not to allow price growth and to keep fair market prices for agricultural products, the state of many northern countries legislatively restricts the import of products¹¹. These measures, along with the target prices set by the state as permissible average prices for agricultural producers, are necessary conditions for stimulating and maintaining domestic reproduction of many types of products that do not experience serious competition with imported goods.

Other methods of stimulation of own agricultural producers are also applied. In Finland and Norway, farmers are exempted from paying taxes, they can enjoy a deferred payment of taxes for the period of implementation of investment projects.

In addition to direct support measures, the government of the northern countries facilitate research in the field of agriculture, provision of educational and consulting services at the expense of state budget funds¹². For example, in Norway, subsidies to agricultural producers in 2014 amounted to 14.7 billion NOK, about 60% from which were direct subsidies, and 2.6 billion NOK was spent for the compensation of prices for farms, and the rest was social spending (1.6 billion NOK)¹³. Bearing in mind the natural limitations in the development of crop production, the northern countries emphasized efforts to increase livestock and poultry farming, which allowed countries to meet their own needs for meat and dairy products and eggs (Iceland is the exception).

As in the rest of the Scandinavian countries, animal husbandry is the dominant position in agriculture. For example, livestock and poultry accounts for about 80% in the total value of manufactured agricultural products in Finland¹⁴. The number of cattle in Finland reaches more than 2 million individuals, despite the fact that there are a little more than 5.5 million people live in the country.

In the dynamics of prices for milk, meat and eggs, there are also two differently directed trends (Figures 7, 8).

¹¹ UN webpage. URL: <http://www.un.org/ru/index> (Accessed: 21 January 2016).

¹² Podderzhka sel'skogo khoziaistva v Norvegii. URL: <http://www.rusnorge.com/?p=2555> (Accessed: 21 February 2016).

¹³ Podderzhka sel'skogo khoziaistva v Norvegii. URL: <http://www.rusnorge.com/?p=2555> (Accessed: 10 January 2016).

¹⁴ Sel'skoe khoziaistvo Finliandii. URL: <http://e-finland.ru/travel/general/selskoe-hozyaystvo-finlyandii> (Accessed: 21 January 2016).

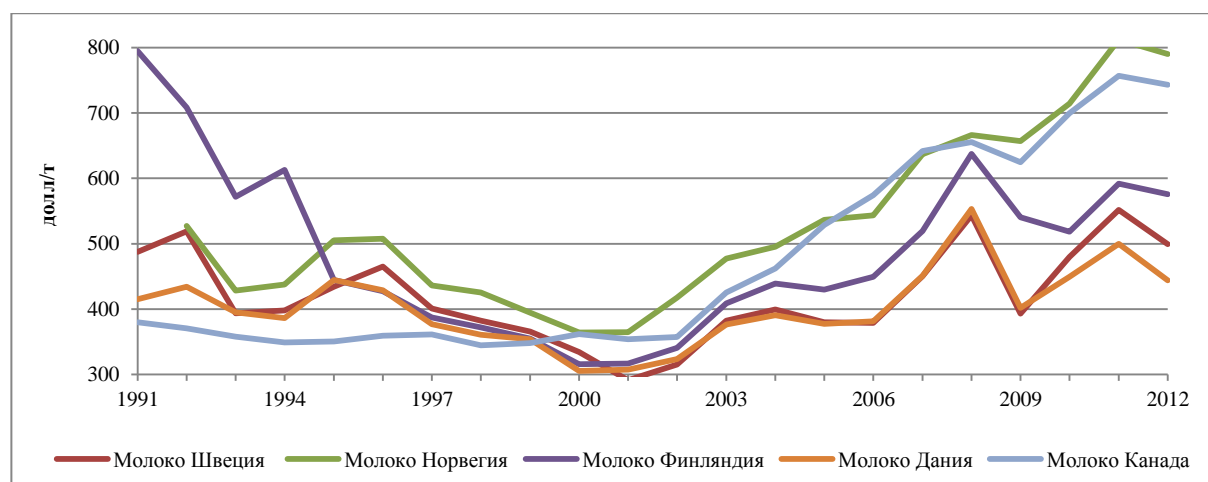


Figure 7. Dynamics of prices for milk from 1991 to 2012. URL: <http://faostat.fao.org/> (Accessed: 11 January 2016)



Figure 8. Dynamics of prices for milk from 1991 to 2012. URL: <http://faostat.fao.org/> (Accessed: 11 January 2016)

Analysis of prices of the modern period shows that the price level, despite a long downward trend until 2000–2001, is significantly higher than 1991 (with the exception of Iceland) (Table 5).

Table 5

Change in prices for meat, milk, eggs in northern countries¹⁵

Country	Products	Price, USD/t		
		1991	2000	2014
Sweden	Eggs	1 473	879	2 010
	Milk	488	334	569
	Chicken	2 543	1 179	n/a
Norway	Eggs	1 999	1 152	2 909
	Milk	n/a	364	850
	Chicken	n/a	1 851	3 462
Finland	Eggs	2 898	752	1 691
	Milk	794	316	676

¹⁵ FAOstat. URL: <http://faostat.fao.org> (Accessed: 21 January 2016).

	Chicken	3 274	1 024	1 982
Iceland	Eggs	4 160	2 341	3 330
	Milk	822	846	651
	Chicken	n/a	3 613	3 280
Denmark	Eggs	1 015	1 050	1 850
	Milk	415	305	544
	Chicken	872	741	1 650
Canada	Eggs	1 666	1 062	2 361
	Milk	380	362	843

Price dynamics for agricultural products, as a mirror, reflects the economic crises. For example, in 1990–1992 prices for many products, including agricultural products, were at a high level. Crisis growth in prices is largely due to the collapse of the European currency exchange rate mechanism, the impact of the recession that began in America and spread to many countries. The end of the crisis of this period was marked by the stabilization of the volume of agricultural production, followed by a downward price trend, which continued until 2000–2001 (Figure 8, Table 5) Presumably, the increase in the prices of goods from 2000–2001 is connected with the European project of liquidation of national currencies that allowed the European countries to raise expenses and that as a result has led to deficiency of the budget of many countries. Against the background of long-term trends in the dynamics of prices for agricultural products, short-term cyclical fluctuations with a period of 2–4 years are observed (Figure 7).

For the initial price series, the correlation coefficients are determined, which are brought to the correlation matrix (Table 6). Correlation analysis allows us to identify similar processes of initial dynamics of different types of agricultural products, these processes arise under the influence of common factors.

Table 6
The correlation matrix of the initial series of prices for agricultural products from 1991 to 2014
(example of Sweden)

Kind of products	Wheat	Carrot	Apples	Milk	Eggs	Chicken
Wheat	1					
Carrot	0,79	1				
Apples	0,70	0,66	1			
Milk	0,25	0,43	0,34	1		
Eggs	0,38	0,35	0,42	0,28	1	
Chicken	0,55	0,37	0,57	0,45	0,25	1

The values of the correlation coefficients show that there is a connection of high and medium strength between the prices of the analyzed objects. A close correlation between the series of prices for plant products (cereals, vegetables, fruits).

Conclusion

Analyzing the price dynamics of agricultural products of the northern countries, we make following brief generalizations:

1. The trend in the dynamics of prices for agricultural products from 1991 to the present has undergone changes. Until 2000–2001 there was a decline in prices, which then gave way to growth in all types of agricultural products. A significant drop in prices from 1991 to 2001 was replaced by upswing, but even today in most northern countries prices barely reached the level of 1991. In the vegetable products segment, there was no sharp decline by 2001, but the increase in prices after this period led to the fact that today prices for most types of vegetable products are higher than in 1991. Low prices for vegetables are held in Canada.

2. The highest prices for agricultural products are observed in Iceland. Also, high prices are in Norway. The average price level is held by Finland. Vegetables, fruit, meat and cereals in Finland are 15–20% higher¹⁶, than on the average in the countries of the European Union, but the prices for dairy products fluctuate at the average European level. And the lowest prices for eggs today are observed in Finland, although from 1991 to 1995 the prices here were much higher than the price level of other countries (with the exception of Iceland). Slightly lower prices for agricultural products are in Sweden and Denmark. For meat products, the lowest prices are maintained throughout the period under study in Denmark. Low prices for most types of agricultural products are noted in Canada. The dynamics of milk prices in Canada is different. There was no decline in prices in the first decade, and the price level today is twice as high as in 1991.

3. The dynamics of prices is subject to the influence of numerous factors. Short-term determinants and, above all, climatic conditions, cause seasonal and cyclical fluctuations. Increasing the efficiency of technologies and the emergence of new scientific and technological solutions, the nature of the world's agro-industrial production and export-import trade have a significant influence on the trend component of the dynamics of prices for agricultural products in the long run.

Long-term trends in agro-industrial markets are also related to the state of the national and world economies, which determine the level of income and quality of life of the population, and accordingly, the volume of food consumption and the change in the structure of demand. Under the influence of many factors in the dynamics of prices for agricultural products, there are trend, cyclical and seasonal fluctuations.

¹⁶ Tendentsii proizvodstva i potrebleniia ovoshchei. URL: <http://www.fruit-inform.com/ru/marketing/research/17411#.VtMozU1f1D8> (Accessed: 11 January 2016).

4. Realizing that the basis of the country's food security and the health of the nation is state own high-tech agriculture, the governments of the northern countries pursue a policy of strengthening the national agriculture, supporting own agricultural producers through various financial mechanisms, thanks to which one can see the high production potential of the agricultural sector.

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About the appearance of the Russian border in Lapland (some results of the discussion)



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Abstract. The article deals with the emergence of the Russian state border in Lapland. The author shows that the existing ideas in the historiography negate each other, and offers a solution to this issue on the basis of another method connected with the rise and fall of the system of double tribute of indigenous peoples — the Lapps (Saami). The approach is illustrated on the basis of traditional methods of analysis of sources, including ancient acts of Moscow and

Danish rulers from the archaeological collection of Y.N. Sherbachev.

Keywords: *frontier, Lapps, Russia, Moscow, Novgorod, Norway, Denmark, Sweden, demarcation, Lapland problem, border*

Introduction

In modern social and political discourse, the Arctic is treated as a region of the future, where along with active development, the process of formation of new borders will be continued. Bearing in mind the complexity and danger of any redistribution in order to maintain a stable environment in the world, it is important to understand: the momentary conjuncture should not ignore the centuries-old historical experience. However, the problem lies in the fact that some historical plots related to the Arctic border are not only not known to a wide audience, but even not clarified and not understood in the science. One of the vivid examples is the question of the appearance of the Russian frontier in Lapland, which caused different sometimes opposing positions for historians on both sides of the border, which is fraught with speculation or even falsifications in the future.

The general attitude of the Russian historiography to the Lapland problem was influenced by the idea of Shaskolsky I.P. that the demarcation of possessions in Lapland occurred on the basis of the Russian-Norwegian treaty of 1326 [1, pp. 47, 54]. Having agreed with it, Ushakov I.F. formulated a point of view according to which the Kola North together with other Novgorod possessions passed under the authority of Moscow simultaneously, in 1478 [2, v. 1, p. 43]. The notion that the historical task of securing the Kola land for the Russian state was already solved, just enabled researchers to treat the "Lapland dispute" of the XVI–XVII as ordinary for that time territorial claim of a foreign power to Russian possessions. At the same time, for Shaskolsky I.P. and for Ushakov I.F. the problem of interpretation of the double tribute of the Lapps living on the territory of the Kola North and Finnmark (the "general district" in Lapland) remained unresolved.

Perhaps, that is why, in one of his last works, Shaskolsky I.P. (together with Vozgrin V.E. and Shrader T.A.) was forced to explain the coexistence of the Russian status of the Kola North and the double tribute of the Lapps by the fact that "here the payment of tribute did not coincide with citizenship" [3, p. 126]. A corresponding reservation is also found in works of Ushakov I.F., who, calling the Kola North the possession of Veliky Novgorod, at the same time believed that the border line, established under the 1326 treaty, divided not the possessions, but "spheres of prevailing interests" [2, v. 1, pp. 36–37].

In parallel with this, separate opinions were expressed in the literature in which the belonging of the Kola North to Russian possessions and the preservation of the double tribute of the Lapps were perceived as mutually exclusive. For example, Volkov N.N. believed that the "systematic extension" of the "spheres of influence" to the Saami refers to the XV century, while in the border regions "the uncertainty of the border ... provokes controversy over the right to collect tribute and dispose of their lands" until the first quarter of XIX century. [4, p. 92]. Ustyugov N.V. shared very similar position, he wrote that "in the XVII century Kola Peninsula was a disputed land, which both the Russian state and Denmark considered to be theirs, "since" the Saami were overlaid with a double tribute "[5, p. 773].

Representatives of foreign historiography criticize Shaskolsky's approach. In particular, the Danish historian J.H. Lindh refuses to recognize the existence of an "ancient border" between Norwegian and Novgorod possessions, arguing that the territory of Finnmark and Kola Peninsula "was unambiguously understood as a huge single community". The "ancient borders" mentioned in the 1326 treaty, in his opinion, are the external borders of the general district for the collection of tribute from the Lapps, separating it, on the one hand, from the Norwegian, and on the other hand, from the Novgorod possessions. J.H. Lind suggested that since the demarcation of the border occurred only in 1826, until this time the territories of the "Russian and Norwegian sedentary population" remained undivided [6, pp. 141–143]

So, the available different points of view are brought to two opposite positions: one of them connects the appearance of the Russian border in Lapland with the Old Russian period (1326), the other — with the New Time (1826). It should be noted that the historiography of the Lapland problem did not have time to evaluate the achievements of the source study. The array of the Russian and the Danish sources of the XVI–XVII centuries, which cover the "Lapland dispute", in the Copenhagen archive, in 1893–1897 was revealed and published by Shcherbachev U.N.¹

¹ Shcherbachev Iu.N. Datskii arkhiv: Materialy po istorii drevnei Rossii, khраниashchiesia v Kopengagene // Chteniia v imp. Obshchestve istorii i drevnostei Rossiiskikh pri Moskovskom universitete. 1893. Kn.1. (164). Otd.1 (dalee – Datskii

Bestuzhev-Ryumin K.N. formerly published "Monuments of diplomatic relations between the Moscow State and England (from 1581 to 1604)," which included the interesting correspondence of Ivan IV and Elizabeth I concerning the status of lands in Lapland².

None of the historians who dealt with the Lapland problem, did not subject these published materials to scrupulous analysis. At the same time, it is very important to pay attention to the very methodology of the problem, since here there is such a contrast spread of positions. Without denying, of course, the need for a more thorough treatment of this topic, considering the development of the source database, the author of this article asked more general and in some way preliminary question: is it possible to find a methodological way out of the theoretical impasse in which historiography has turned out?

Background of the question

Initially, it is necessary to make a digression into the history of the problem, whose roots originate in the Novgorod era. For a long time, the vast expanses beyond the Arctic Circle, which occupied Kola and part of the Scandinavian peninsula, remained a no-man's land (*terra nullius*). A few tribes of Lapps (the modern name — the Saami) lived there, they were at the stage of clan relations. The population of this territory did not create its own statehood and therefore was doomed to subordination to stronger social structures from outside. Scandinavians were the first who came to know the territory of Lapland, they lived in the northern part of the fragmented Norway — in the region of Halogaland. The native of these places, the sailor Otter, who in the IX c. made a voyage around the Kola Peninsula, reported the following: "This whole country is deserted, and only in a few places *terfinns*³ live, which engage in hunting, fishing and catching birds" [7, Tiander K., p. 56]. Barter trade was of great importance in the economy of the inhabitants of Halogaland. Furs were particular interesting to traders, furs could be successfully sold in the markets of Europe. Since the Lapps were excellent hunters, the obvious economic usefulness of contacts between the enterprising armed elite of Northern Norway (*Hofðing*) and the aborigines of the European Arctic gradually led to the imposition of the last by tribute⁴.

At the same time, a similar advance in the direction of the Kola Peninsula begins also from Old Novgorod. The trade works as the same motivation. Rybina E.A. notes that "Novgorod carried

arkhiv); *Russkie akty Kopengagenskogo gosudarstvennogo arkhiva, izvlechennye Iu.N. Shcherbachevym* // *Russkaia istoricheskaia biblioteka*. SPb., 1897. T.KhVI (dalee – *Russkie akty*).

² *Pamiatniki diplomaticheskikh snoshenii Moskovskogo gosudarstva s Angliei (s 1581 po 1604 god)* / Pod red. K.N. Bestuzheva-Riumina. *Sbornik imp. Russkogo istoricheskogo obshchestva*. SPb., 1883. T.38, pp.8–10.

³ Under the "*terfinns*" Otter meant the lappers of the Kola Peninsula. The northern shore of the White Sea is still called "*Tersky*" [29, Shaskolsky I.P.].

⁴ *Sosedi na Krainem Severe: Rossiia i Norvegiia: Ot pervykh kontaktov do Barentseva sotrudnichestva* / Avtory–sost. A.A. Kiselev, V.A. Karelin i dr. Murmansk, 2001., p.24.

out links between Rus, Western Europe, Byzantium and the Muslim East" [8, p. 4]. The Novgorod market, like in northern Norway, was also intermediary, and therefore it constantly needed the import of new goods. Novgorod boyars organize an expedition to the north for the preparation of furs, fish, lard, walrus tusk. In the XI century the Novgorodians reached the White Sea, and a century later they reached the Kola Peninsula. Like the Scandinavians, together with traders and industrialists, the representatives of the Novgorod authorities (according to the chronicler, the "Tersky tributary") came here, and no later than 1216 overlaid the Lapps with tribute⁵. The advance of Novgorodians deep into Lapland, to the west, inevitably pushed them against the Scandinavians (in Russia they were called "murmans"). So, the Lapland question arose in relations between Novgorod and Norway.

The first attempt to resolve it, undertaken by Novgorod and Norway, led to a compromise, which was expressed not only in establishing a strictly defined amount of tribute (no more than five squirrel pelts from each Lapp-hunter) for both sides, but, in fact, to the creation of a common Norwegian-Novgorod district, including Finnmark and the Kola North. All the Lapps that lived in this territory, from that time paid tribute to two states: Norway and Novgorod. These conditions were fixed in the Russian-Norwegian treaty, which came down to us in the form of the Runic (demarcate) Charter, which has no date of creation. Researchers put forward various dates of the Runic Charter. Thus, Butkov P.G. considered the turn of the IX–X centuries as the time of its creation, Karamzin N.M. — the turn of the 10th–11th centuries, Shaskolsky I.P. — 1251, Munch P. — 1326, Schlessor A. — the XV century. [1, Shaskol'skii I.P., pp. 38–61].

Large spaces along the banks of the northern rivers along the southern and western coasts of the White Sea, having become part of the possessions of Veliky Novgorod, have become a kind of springboard for Russian statehood for the subsequent breakthrough in the polar regions and the Arctic. Unlike the already divided and conflicting South, the North at that time was still a relatively quiet area and the direction of the least resistance. However, in course of time, on drawing near the Arctic Ocean, the Russian colonization was to meet not only with the growing resistance of the natural environment, but also with the western world, which also penetrated into the northern latitudes by continental and sea routes.

Double tribute in Lapland was caused by a lack of strength of both sides to resolve the issue in their favor: after all, neither the Norwegian nor the Novgorod permanent settlements on the territory of the region did not exist for a long time, the strength of the competitors were approximately equal. An attempt to break the balance was made at the beginning of the XIV

⁵Novgorodskaia perviaia letopis'. M.-L., 1950. S.57.

century, when the pressure of Novgorod intensified towards the Norwegian lands, and the Russians, along with the Karelians and the Saami, made constant raids on Finnmark. In 1323, such an integrated detachment, having penetrated in Halogaland by ships, burned Bearkey, the estate of the ruler of Norway Erling's son Vidkun [1, Shaskolsky I.P., p. 40]. The Norwegian authorities, unwilling to lose their geographically justified presence in the western part of the district, took retaliatory measures. On the one hand, the military fortification of Vardehus (the Russians called it "Vargav") was built there, and on the other hand, the church launched its activities to associate the pagan Lapps with Catholicism⁶.

In 1326, a new treaty was concluded between Novgorod and Norway, which indicates a change in Novgorod's policy. Novgorod, without claiming to Finnmark any more, agrees to maintain the status quo with the restoration of the "old" ("ancient") borders of the district. The restored compromise from time to time continued to be violated because of individual conflicts. Thus, for example, the chronicle recorded the "murman" attack on the Korelsky churchyard in Varzuga in 1419.⁷ The evidence about the activities of the Novgorod governor Valita on the Murmansk coast came in legends, he defended these lands from the Scandinavian raids allegedly in the second half of the XV century. [2, Ushakov I.F., vol.3, pp. 281–288; 9, Popov A.I., pp. 133–135]. The reality of the existence of this man is proved by the fact that the creation of a fortress — "Valitov site" is associated with his name. This fortress, according to the "Big Drawing Book", was on the island near the shore, between the mouths of the rivers Vorjema and Rodenga situated in Western Murman⁸. With the erection of the first Norwegian and first Novgorod fortresses in Lapland, each of which designated the sphere of influence of their country, the process of crystallization of the Lapland border started, which was intended to turn semi-free lands into possessions. Sooner or later, this line had to manifest itself somewhere in the gap between Vardehus and Vorjema.

Tributariness and state state sovereignties

During the XIV-XV centuries both in Scandinavia and the Russian plain, the complicated political processes took place, during which Norway became part of the Danish state, and Novgorod land was included in the Moscow principality. Accordingly, the owners of the general district of the collection of tribute from the Lapps also were replaced: the district turned from the Novgorod-Norwegian into the Russian-Danish. The general Russian-Danish space, where a double tribute from the Lapps was gathered, covered almost the whole of the Kola Peninsula and

⁶ Sosedni na Krainem Severe... Pp. 39, 184.

⁷ Novgorodskaja pervaja letopis'... Pp. 411–412.

⁸ Kniga Bol'shomu Chertezhu. M.-L., 1950. P. 148

Finnmark, which were connected through a narrow coastal strip at the north of Lapland. The area between the lake Inari and the sea coast was a kind of open corridor for migration to both sides of the collectors of the tribute of the Danish and Russian states. The fate of this corridor was solved in the XVI–XVII centuries. The specificity of this space was the absence of ordinary state borders in it. The border from the point of view of its functional purpose is designed to "protect" something. The state border "protects" the possessions. The territories of Lapland, if needed in demarcation, primarily with the goal of differentiating the taxable areas of individual states. But since there was no need for it, the very existence of a state border on a sparsely populated territory with a homogeneous ethnic composition was hardly necessary. Therefore, it is impossible to talk about the demarcation of possessions in Lapland before the creation separate taxable areas by the states in this region.

The attempt of Sychenkova E.V to determine the general Norwegian-Novgorod district of charging tribute in Lapland as a condominium [10, p. 52]. After all, the latter provides not only common ownership, but also joint management of the territory by two or more states [11, Baburin S.N., pp. 51-53]. Lapland's experience of joint collection of tribute did not provide for joint management, on the contrary, it was accompanied by competition between the district's owners, which eventually led to the division of zones of influence, the actual disintegration of the district into two parts — the western and the eastern.

The desire to reconcile the double tribute of the Lapps with the attribution of the Kola North to the state possessions of the Russian state loses its force when analyzing the political orientation of the aboriginal population living within it. There was no unified position to determine the jurisdiction among the Lapps of the Kola North. This is evident from the addressee's choice of Lapps to send complaints in connection with harassment imposed by tribute collectors; whom the Lapps considered a legitimate authority to resolve the disputed situation.

In 1595, a wave of disturbances swept in the Eastern Lapland due to the actions of the Danish lodged Joseph Mortenson. While the Paz Lapps sent their petition to the Russian Tsar Fedor Ivanovich, the Kildin, Nototzero and Maselga Lapps — to the Danish King Christian IV⁹. At the same time, this fact can hardly testify to the existence of a strict division of the territory of the Kola North into the Danish and Moscow zones. The absence of a permanent frontier in the north of Lapland informed all the emerging images of the border of a certain mobility, which, according to modern researchers, is an inevitable given in the process of turning a frontier into a border

⁹ Russkie akty. St. 285–292

zone. In particular, as noted by Zeleneva I.V., moving borders generated "spatial blurring of the geopolitical self-awareness of the population" [16, pp. 79-83].

The situation had to look even more difficult in the place where the Russian-Danish district rested on the territory where tribute from the Lapps was collected jointly by Rus and Sweden. The peculiar "buffer zone" separating the Russian-Danish Lapland from the Russian-Swedish one, began at a distance of about 100 kilometers from the sea shore to the south, near the lake Inari. The Lapps living in the Inari ("Inadrsky") churchyard paid tribute to three states: Denmark, Sweden and the Russian state¹⁰. The contact of two different taxation zones, with the participation of Denmark and Sweden competing with each other, formed the basis for the appearance of a frontier, which in the Russian sources was referred to as the "svitsky" one¹¹. The time of the appearance of this frontier obviously goes back to Orekhovetsky Treaty in 1323 [6, Lind J.H., p. 135]. With the absence of a strict demarcation line, the attempts to clarify and correct it were continued until the end of the XVIII century, but after Finland joined Russia in 1809, this frontier lost the status of a state border¹².

In any case, the practice of collecting tribute in Lapland does not allow to determine the citizenship of the Lapps unequivocally, which makes it questionable to classify the territory of the Kola Peninsula as undivided possession of one of the countries, as well as the desire to present the entry of the Kola Polar region into the Moscow State among other Novgorod possessions as soon as Novgorod lost its independence. The opinion of Shaskolsky I.P. and Ushakov I.F., who attributed the appearance of the Russian frontier in Lapland to the Old Russian period, thus cannot be accepted without criticism.

The Kola North, like the whole Lapland, until the beginning of the XVII century, apparently, should be reckoned to the territories with undetermined status [11, Baburin S.N., p. 294]. Lapland was a frontier, which in modern literature means a separate political and geographical area that closes the space of a settled or developed territory and which is located outside the unified space of political entity [12, Zeleneva I.V., p. 80]. The undeveloped lands in the south, east and north were that irritant that constantly stimulated the territorial growth of the Russian state and contributed to its transformation into the empire. The events that took place around Lapland in the XVI–XVII centuries were not yet considered in the context of determining the status of Moscow's policy.

At the same time, there is every reason to consider it as a strategy for securing the Kola Peninsula for the Moscow State. The Lappish problem peculiarly reflected the processes of

¹⁰ Sbornik materialov po istorii Kol'skogo poluostrova v XVI–XVII vv. L., 1930. P. 59

¹¹ Ibidem.

¹² Gosudarstvennyi arkhiv Arkhangel'skoi oblasti (GAAO). F.1. Op.2. T.1a. D.212. L.7; F.1367. Op.2. D.1165. L.1.

territorial growth of the Moscow state, the forming of its perimeter, the strengthening of power and ambitions of the central government, the constant need for defense and security. Even before subjection of Novgorod, Moscow princes who sent bands for hunting birds for prince hunting to the Kola Peninsula, considered the Tersk side as their sphere of influence, demanding that Novgorod people do not go there [13, Platonov S.F., p. 1]. After the accession of Novgorod, the Far North was increasingly entering the sphere of Moscow's policy. Already at the end of the XV century the Northern sea communications were first used by the center as an alternative to the Baltic ones. In 1494 the Russian diplomat Dmitry Zaitsev, returning from Denmark, for the first time passed by sea around Scandinavia across the White Sea to the mouth of the Northern Dvina. Vlasius (Vlas Ignatov, Ignatiev), translator from Latin and German, accompanied one of the Russian embassies to the Danish king by sea in Scandinavia in 1493-1494, 1499-1500. [14, Lukin Yu.F., p. 234]. In 1496 the Moscow diplomat Grigory Istoma was sent by Ivan III to Denmark for negotiations. Since the Russian-Swedish war that was taking place on the shores of the Gulf of Finland made the shorter and more traditional route through the Baltic Sea unsafe, he chose for his journey a roundabout route through the North. At first Istoma G. reached the mouth of the Northern Dvina, then he went by sea to Trondheim, along the White, Barents and Norwegian Seas, circling the Kola and Scandinavian peninsulas, then his journey was continued by land [15, Shaskolsky I.P.]

If we analyze all known and introduced sources that characterize the policy of the Moscow state in relation to Lapland until the fall of double tribute [16, Fedorov P.V., pp. 457-463], is it possible to imagine the Lapland strategy as a process subject to changes? What kind of periodization is possible here?

The first stage: the beginning of development (1517-1573).

Within the framework of *the first stage* (1517-1573 gg.), the Moscow authorities tried to achieve the effect of establishing constructive cooperation with the Lapps. Already in 1517, Vasily III warned the Russian collectors of a tribute on the inadmissibility of arbitrariness in Lapland [3, Vozgrin V.E., p. 134]. In 1526 Vasily III instructed the Novgorod archbishop Makariy to send clergy to the Far North to perform the rite of Orthodox baptism of the Lapps¹³. This was preceded by a great missionary work. A wide field of activity was opened for the preachers of Orthodoxy (Trifon, Theodorit, etc.) in Lapland, but within the Kola North, since the Lapps living in Finnmark had already been influenced by Catholicism. The church in Norway, however, experienced a decline at

¹³ Polnoe sobranie russkikh letopisei (PSRL). T.6. P. 289.

that time, caused by the Reformation¹⁴, and this released Orthodoxy from a Western rival. The activity of the Orthodox missionaries in the eastern part of the Russian-Danish district, in general, was also successful due to their flexible tactics.

Acting near the rivers of Kola and Tuloma, Feodorit, referring to the number of so-called "non-possessors", relied on the study of the Sami language, translations of the Bible. But the model of the monastery proposed by him did not pretend to the economic development of the region. After being materially weak, the monastery of Feodorit fell apart, and his monks went to the river Pechenga, to Trifon. Trifon, on the contrary, following the Joseph's tactics, built his missionary activity with the help of "talks about the purchases" and the involvement of Lapps in trade and economic relations. Therefore, unlike Feodorit, he was engaged in the enlargement of his monastery with the help of his disciples: he acquired land, developed the economy, and at the same time received the support of Ivan the Terrible [2, Ushakov I.F., v. 1, pp. 58-60; v. 2, pp. 211-214, 296-300]. The foundation of the Pechenga Monastery in the middle of the XVI century had great importance for the establishment of Orthodoxy and the Russian statehood in the most controversial, northwestern region of the Kola North, directly bordering with Finnmark. One of the most important consequences of the creation of the local monasteries — in Kandalaksha, Pechenga, etc. — was the Russian monastic land ownership¹⁵. Bearing in mind that the Lapps still paid a double tribute, this measure clearly indicated Moscow's unwillingness to preserve the district of joint ownership and to consider the interests of its co-owner — Denmark. The monastic patrimonies, apparently, were called upon to temporarily replace the structures of governance of the Moscow state that did not exist in the uninhabited lands.

The events of Moscow were reinforced by the Russian colonization, which reached the Murmansk coast during this period. The positions of the Russian state in these remote regions begin to be institutionalized in the emerging fishing and trading activities. This led not only to the creation of seasonal Russian settlements on the shore, but also to the emergence of international bargaining with foreigners.

The latter had great importance for the Russian state, because the country at that time did not have a convenient port for international trade. And Kola became this port in the 1570-80s, located near the Murmansk coast [17, Shaskolsky I.P.]. Every year merchants from Western European countries, inland regions of Russia and local residents gathered for bargaining there. The increased commercial value of Kola stimulated its growth: if in 1565 it had only 3 peasant

¹⁴ Sosedni na Krainem Severe... P.62–63.

¹⁵ Zhalovannaja gramota Ivana IV Kandalakshskomu monastyru ot 1554 g. // Russkaja istoricheskaja biblioteka. SPb., 1875. T.2. № 170. S.689–690; Sbornik gramot Kollegii jekonomii. Pg., 1929. T.II. № 136.

households, in 1574 — 44, then by the beginning of the 80s. of the XVI century — already 71 households [2, Ushakov I.F., v. 1, pp. 74-79].

The second stage: identification (1573-1583)

The previous success allowed the Moscow authorities to pursue a more rigid policy towards Lapland at the second stage (1573-1583), which, first of all, was expressed by the formulation and proclamation of the position of the Russian center about ownership rights for Murman. In July 1582, in answering letter to the Queen Elizabeth I, replying to her question: "Are those parishes under his province or not?" Ivan the Terrible categorically calls Kola and Pechenga his "original patrimonial lands."

Drawing attention to the fact that Denmark threatens the security of the British merchants trading in the North, he unsuccessfully asks Elizabeth for military assistance by ships¹⁶. In July 1582, Ivan IV in his letter to Frederick II declared his position rather harshly: if "henceforth your people come to our sea shelters in Kola and Kolmogory with robbery and start the German guests to rob", then "you will stay with us till the end and crush the kiss of the cross, and we shall stand for it and protect our marine piers"¹⁷. In 1573, the government sent a scribe Vasily Agalin to the Kola North to carry out the registration of the population, which resulted in the prepared scribe book¹⁸. Sadikov P.A. quite reasonably associated the visit of Agalin V. with the "Lapland dispute", citing the notes of the Dutch merchant Simon van Salingen in support [18, p. 205]. The foreigner reported that in 1573 the "Russian boyars or ambassadors" arrived in Lapland "to investigate local conditions and establish a border with the Kingdom of Norway", they "inspected Lapland" and established the border along Paz River [19, Filippov A.M., p. 303]. These measures, however, did not lead to a settlement of the problem, becoming only the initial link in the long chain of the border negotiations. Moscow continued to develop monastic land ownership. The Center practices the transfer of land holdings in the Kola North to large and well-known monasteries located for hundred kilometers from here: for example, the Trinity of St. Sergius and the Kirill-Belozersky¹⁹. The landed estates occasionally complained along with the Lapps. So, for example, in 1581, the Lapps of the Pechenga and Motovka churchyard were handed over to the Pechenga monastery by the tsar's letter of grant [2, Ushakov I.F., vol. 1, p. 61].

Foreign subjects felt the activation of the Moscow presence in the eastern part of the Russian-Danish district. For example, the English traveler William Barrow on June 23, 1576, during

¹⁶ Pamiatniki diplomaticheskikh otnoshenii Moskovskogo gosudarstva s Angliei (s 1581 po 1604 god) / Pod red. K.N. Bestuzheva-Riumina. *Sbornik imp. Russkogo istoricheskogo obshchestva*. SPb., 1883. T.38. Pp.8–10.

¹⁷ Russkie akty. Pp. 205–206.

¹⁸ Pistsovyie knigi Russkogo Severa. M., 2001. P. 287.

¹⁹ Sbornik gramot Kollegii ekonomii. Pg., 1922. T.I. № 221a; Tam zhe. T.II. № 139.

interrogation, regarding belonging of the Lapland lands, informed the British government: "The mighty sovereign tsar of Russia is the supreme ruler of the country of the Lapps"²⁰.

The strengthening of the Russian influence in the territory of the common district caused resistance from the Danish side. After the beginning of the 1580-s, when Denmark begins to consider military power as the tool of the struggle for the Lapland lands, the Lapland issue has turned into a serious international problem. The Danish King Frederick II, realizing his claims to the eastern Lapland as part of the common possessions with Moscow, he decided to collect tribute from foreign merchant ships going to Murman.

Since this measure provoked opposition from the traders, the king makes more severe step, ordering his subordinates to seize the ships coming to Murman and foreign ships from Murman, and to do it even in the Kola Bay "for Kola belongs to Norway as much as to Russia"²¹. The Danish squadron, which controlled the coast of Murman in 1582, looted goods from overseas merchants for the sum of 50,000 rubles²². Frederick II soon orders his collectors sent to the Kola North to collect tribute not only from the Lapps, but also "from the Russians, Karelians ... monasteries, villages and all the lodged Lapland", suggesting, however, to refrain from violence²³.

Thus, by the beginning of the 1580-s, the Danish authorities already clearly expressed their claims to the entire Kola Peninsula. At the same time, if the actions of the Danish squadron off the coast of Murman were very successful, then the Danish government's desire to impose a tribute to the Russian population was essentially ineffectual²⁴.

The government of Ivan IV in 1582-1583, as countermeasures, introduces the provincial administration and builds a prison in Kola. According to the scribe book by Alai Mikhalkov, in 1608 the Kola prison was a strengthening of the quadrangular form, which had 6 towers. According to Ushakov I.F., the total length of the walls around the prison was 510 meters, the fenced area was 1.6 hectares [20, p. 8].

The Kola voivodes became the conductors of the policy of Moscow. It is known that the first Kola voivoda boyar Averky Ivanovich Palitsyn introduced the Russian customs duty on Murman. Sudimantov M.F. who replaced him, was engaged in the construction of the Kola prison.

The voivodas represented the Russian state on the far northern outskirts, and therefore the government sought to appoint the representatives of noble families, sometimes boyar and

²⁰ Pokazaniia gospodina Uil'iama Berrou na doprose. *Angliiskie puteshestvenniki v Moskovskom gosudarstve v KhVI veke*. L., 1937. P. 92.

²¹ Datskii arkhiv. № 441.

²² Russkie akty. Pp.203, 204.

²³ Datskii arkhiv. № 445.

²⁴ Datskii arkhiv. № 449, 450, 452, 453.

principally to this sovereign's post. In the XVI-XVII centuries for example, Kola voivodas were the princes Vasilchikov G.B., Obolensky F.T., Scherbatov I.O., Shakhovskoy S.I., Chertensky I.G., boyars Blagovo S.F., Godunov I.A., Khitrovo V.O., Buturlin A.V., Nashchokin A.T. and others. Office of voivode extended to the territory, which included the entire Kola Peninsula (without Tersk coast) and the border strip from the Barents Sea to northern Karelia. As the Kola voivoda Sudimantov M.F. witnessed in 1584, his power extends not to the whole Lapland, but only to five Russian villages (districts), incl. Keret, Kandalaks (Kandalaksha), Pora-Guba (Porya Guba), Kaudu and Kola²⁵. The term "Kola County" for designating this territory took shape somewhat later, in the XVII century.

The Tersk coast, despite its geographical affiliation to the Kola Peninsula, did not obey Kola, but was part of the Dvina county with its center in Kholmogory (on the opposite shore of the White Sea). Such a spatial structure, obviously, pursued the goal of separating the disputed, border area from the rest of the territory where Moscow's sovereignty was not questioned.

The military-administrative measures taken by Ivan IV to strengthen the Russian positions on Murman proved to be effective. For the next three decades, Denmark did not dare to blackmail the Moscow state with local military attacks on the Lapland coast.

The jerk of the Russian state to the coast of the Barents Sea which happened in the last years of the reign of Ivan IV, apparently, was connected with Moscow's foreign policy strategy in the Livonian War. Although the main struggle unfolded in the Baltics, Kola could be seen by Ivan IV as Russia's emergency exit to Western Europe.

The increased interest of the first Russian tsar to the distant Lapland, not found in the state history of Russia, either before or long after it, was indeed phenomenal. The kind of identification of the Kola North that took place within the framework of the state strategy of the XVI century became possible mainly due to the fact that "by the middle of the XVI century the autonomy of individual state subsystems was sharply decreased, a rigid hierarchy of the state structure was lined up with a political and innovative center in Moscow "[12, Zeleneva I.V, p. 58], and the latitudinal strategy associated with the conquest of Siberia, did not have time yet to absorb the meridional searches that were actual since the first centuries of the Russian history. The lack of access of the Moscow kingdom to the Baltic and Black Seas, with the continued desire for territorial growth (and in fact in all directions) and the sudden awareness of the obstacles that stood in the way of this movement, "squeezed" Moscow into the relatively free North.

²⁵ Datskii arkhiv. № 451.

The third stage: the crisis (1584-1591)

The general atmosphere after the heavy Livonian war, the death of Ivan the Terrible and the political transformations connected with it, contributed to the fact that at the third stage (1584-1591) the Moscow government decided to weaken its positions on Murman.

The slowness of the situation was first felt by the Kola voivoda Sudimantov M.F., who in 1584 extremely evasively informed the Danish-Norwegian envoys of the true reasons for the construction of the Kola prison: he said that he was put up for protection allegedly from the sea brigands. Sudimantov M.F. departed from some questions, referring to the lack of instructions from the central authorities²⁶.

The subsequent actions of the Moscow government entered into a contrast contradiction with the political genesis that was observed on Murman since the beginning of the XVI century. On the one hand, after the international bargaining was transferred from the severe shores of the Murmansk coast (the "needy place") to the newly founded city of Arkhangelsk in 1585, Murman lost the importance of the Russian "window to Europe". Kola was permitted to trade with foreigners only with products of local crafts. On the other hand, all the riflemen were withdrawn from Kola, the place became unarmed [2, Ushakov I.F., vol. 1, p. 90].

The reorientation of trade from Murman to the Northern Dvina did not solve the Lapland problem. The Western factor continued to exert its influence in Lapland, regardless of the will of the tsar. In the last quarter of the XVI century Sweden, which was in hostile relations with both Russia and Denmark, sought to incorporate Lapland into its sphere of influence. The Swedish King Johan III approved the plan for its capture. In 1589 the Swedes together with the Finns ravaged many villages on the Kola Peninsula, they also completely destroyed Kandalaksha and Pechenga Monastery. During the attack on Kola in 1589, the city, left without riflemen, organized the defense independently, by the forces of local residents. Fedor Ivanovich freed the citizens for three years from all duties in return²⁷.

With the preservation of the Russian positions in Kola, populated by Orthodox subjects, the situation beyond its borders was poorly controlled. When the Danish-Norwegian envoys offered the Kola voivoda Sudimantov M.F. to meet in Vaida-Guba, he refused, offering Kola as meeting place, referring to the fact that in Vaida-Guba "royal people should not quarrel with the Russian people at the merchant place"²⁸.

²⁶ Datskii arkhiv. № 451.

²⁷ Zhalovannaia gramota tsaria Fedora Ivanovicha zhiteliam Koly ot 8 apreliia 1590 g. *Otechestvennye zapiski*. SPb., 1829, noiabr'. Ch.90. Pp. 188–191.

²⁸ Russkie akty. P. 210.

Using the change in the balance of power, Denmark in 1591 sharply increased the size of the collected tribute from the eastern Lapps. The analysis of published by A.I. Andreev and I.N. Ulyanov "Paintings of churchyards of Lapps" 1623–1624 shows that if in the 1580s. the Danish collectors were to collect tribute from the Orthodox churchyards of eastern Lapland at a rate of about 400 three-kopec coins annually, which was 6 times less than what the Russian collectors planned to collect in the same churchyards (about 2500), but since 1591 the sum of the Danish tribute came up to the sum of the Russian tribute, and even exceeded it. The proportionality of the sovereign and royal tribute, collected in the churchyards of Tersk and the upper Lapps after 1591 is confirmed by the parish book of the Novgorod quarter of 1620/21. In accordance with it, the sum of the first was 80 rubles 14 three-kopec coins (or 2678 three-kopec coins), the sum of the second — 78 rubles 18 three-kopec coins (or 2615)²⁹.

Denmark's contribution policy in the territory of eastern Lapland from 1591 clearly indicated the transformation of tribute into a tool of political pressure on Moscow.

The fourth stage: the emergence of the border (1591–1623).

The Moscow government tried not only to regain lost ground in the Kola North, but also to successfully solve the Lapland problem at the *fourth stage* (1591–1623).

In the early 90-s of the XVI century all the merchants³⁰ again got the right to trade in Kola, but the fall in the importance of this settlement as a major shopping center became inevitable. Arkhangelsk, being a freezing port, situated further from Western Europe, benefited from Kola by its proximity to the center and safer living conditions. The mechanism of "attaching" merchants to Arkhangelsk was the liquidation of trade monopolies, which only the British used for a while on the Dvina. Along with them it was possible to see the Danes, the Dutch and the French in Arkhangelsk at that time [21, Kizevetter A.A., p. 171].

But Kola was strengthened administratively: the riflemen returned there, and the Pechenga monastery destroyed by the Swedes in 1589, was transferred there [22, Korolkov N.F, pp. 30–32]. This helped to repulse the second assault of the Swedes on Kola in summer of 1591. The number of the Swedish army reached 1200 people at that time. During the battle, near the walls of the prison the enemy lost 215 people killed and wounded [2, Ushakov I.F., vol.1, pp. 90–92]. In 1595, after years of wars between Russia and Sweden, the Treaty of Tyvza was concluded, according to which, among other conditions, Sweden abandoned its claim to the Kola Peninsula. But Denmark still had it, despite the fact that it was involved in the struggle with Sweden for

²⁹ Prikhodo-raskhodnye knigi moskovskikh prikazov 1619–1621 gg.: Sb. dokumentov / Sost. S.B. Veselovskii. M., 1983. Pp. 318–319.

³⁰ Russkie akty. Pp. 246, 254

influence in the Baltic and for the right to collect the tribute from the Lapps in Finnmark. But such difficult conditions of rivalry forced the new Danish King Christian IV, who replaced his deceased father Frederick II in 1588, to abandon military pressure on Russia, choosing to negotiate as a way of solving the "Lapland dispute".

In lengthy letters to each other, each party tried to prove its rights to Lapland. The Danish side cited the example of the Murmansk Sea, which washed the northern shore of the Kola Peninsula. On the grounds that the Russians called the Norwegians as "Murmans", the ownership of the sea and of the whole Lapland to Norway was proved³¹. In turn, the Russian side refuted these arguments by saying that "Lapland is old and part of our fatherland in Novgorod land, it was taken during the war... by a Karelian ruler named Valit"³². The confessional affiliation of the local population was included in the system of Moscow's evidence: it was indicated that Orthodox Lapps live in eastern Lapland, here is the Pechenga monastery and the church of Boris and Gleb³³.

The Russian ambassadors did everything in their power to emphasize that since the Lappish issue arose only a few years ago and had not disturbed anyone before, it is most likely that it is far-fetched and does not have any serious grounds: "But neither great-grandfather of your sovereign nor grandfather in the previous years about Lapland did not say anything and did not plead for it"³⁴.

When the Danish side offered to turn to the works of historians (Samson Grammatik, etc.), in order to use the arguments of the era of the first treaties of Norway and Novgorod, the position of the Russian authorities was announced: "There is nothing to prove the belonging of Lapland to Norway by historians. Historians write a lot, but do not always convey the truth. The testimonies of living people are of far greater significance "[23, Forsten G., p. 287]. It was planned to hold border congresses in Kola for the settlement of the territorial issue in 1595 and 1597, but each time they broke down: as the Russian ambassadors did not come or the Danish ones³⁵.

In 1598 Boris Godunov put forward the claims for the Danish side not only on the Kola Peninsula, but also on part of Finnmark. The people close to tsar replied to the Danish ambassadors that the border must pass along the river Ivgei, "there are thousands of miles from our ruler to Kola prison", so the stronghold of Denmark, the city of Vargav, "is situated at Lapland, our ruler's fatherland", so that the tsar "ordered to ruin this city". At the same time, with the establishment

³¹ Russkie akty. P. 320.

³² Russkie akty. P. 383.

³³ Russkie akty. Pp. 384, 385.

³⁴ Russkie akty. P. 384.

³⁵ Datskii arkhiv. № 511, 512, 520, 521, 524.

of the border, the tsar's close associates offered to abolish the double tribute of the Lapps³⁶. The change in the tactics of the Russian authorities led to a change in Danish tactics. In 1599 the squadron of Christian IV arrived in Kola, where the king appealed to the local inhabitants with the proposal to accept the Danish citizenship, but they refused [2, Ushakov I.F., v.1, p. 95].

In 1601 a strong famine began in Russia. Bearing in mind that the eastern neighbor had the acute shortage of resources, Christian IV decided to bribe Boris Godunov, offering him 50 thousand thalers for Lapland, but the Russian tsar refused, and also refused from Christian IV offer to divide Lapland in such a way that the most valuable, northern, coastal part of it, where the trade developed, moved to Denmark, and the southern part — to Moscovy³⁷.

But even then, the Danish court did not lose hope and continued to weave intrigues. Christian IV decided to become relatives with Boris Godunov, offering to marry his brother Hans to the daughter of the Russian Tsar Ksenia. By this marriage, the king wanted, first, to obtain the Kola Peninsula, which the bride could receive as a dowry. Belonging to "a great, though not paramount boyars" [24, Klyuchevsky V.O., p. 22], Boris Godunov liked the idea of dynastic marriage. Hans came to Russia, but the matter did not come to negotiations, because he suddenly died. [23, Forsten G., pp. 288–295].

Meanwhile, in Lapland the events developed according to the following scenario: "And from the year 110 the Vargav people of the sovereign tributaries to Konchansky lapland ... did not allow to go. And from the year 110 the Kola voivodes did not allow collectors of tribute of the Danish king to go to Lapland"³⁸.

Thus, the double tribute of the Lapps which occurred for centuries at the most part of the territory of Lapland was abolished in 1602. The tribute paid by the eastern Lapps to the Danish kingdom, from now on, began to flow into the Moscow treasury³⁹.

Under the conditions of the coming civil disturbances in Russia, Boris Godunov could no longer continue the Lapland dispute with Christian IV, the king's attention was focused on domestic politics. The continued pressure from Denmark still forced the government of Boris Godunov to declare a concession: in early 1603 it withdrew its claims to Finnmark, proposing to draw a border just to the west of the Pechenga monastery. At the same time, the area where the Orthodox Church of Boris and Gleb was located, had to be transferred to Denmark. The tsar entrusted more detailed consideration of this issue to his ambassadors, they went to negotiations

³⁶ Russkie akty. Pp. 323, 324, 326.

³⁷ Datskii arkhiv. № 543, 573.

³⁸ Sbornik materialov po istorii Kol'skogo poluostrova... P. 55.

³⁹ Ibid. Pp. 55–64; Ocherki istorii SSSR. Period feodalizma. KhVII v. / Pod red. A.A. Novosel'skogo, N.V. Ustiugova. M., 1955. P. 773.

with the Danish ambassadors to Kola. But the border congress did not lead to constructive solutions⁴⁰ [23, Forsten G., pp. 297–298], for which B. Godunov hoped apparently, wanting to maintain the status quo in Lapland until the establishment of political stability in the center. Rapid change of positions and compliance of the Moscow government showed that the fixed border in Lapland did not yet appear by the beginning of the XVII.

By the end of the civil disturbances, when the Swedish intervention began in Russia, its consequences were felt in the North. In 1611, the Swedes attacked the Kola prison, but they could not take it, which forced the Swedish government to again abandon claims to the Kola Peninsula.

In 1611 Sweden begins the Kalmar War with Denmark, but Sweden also loses it, refusing claims to Finnmark. This, in turn, unleashed Denmark's hands. Taking advantage of foreign policy circumstances, Denmark succeeded in renewing the double tribute of Lapps for one year. In December 1611, the Kola voivoda M.E. Vikentiev let the Danish collector go to the eastern Lapland, and the tribute was collected from the Lapps. Meanwhile, the Danish authorities refused to let the Russian collector come into their possession. In 1613, the Kola voivoda V.T. Zhemchuzhnikov who replaced M.E. Vikentyev, refused to let the tribute collector from Denmark come⁴¹, after which the double tribute of the Lapps collapsed finally. Thus, the general Russian-Danish district ceased to exist.

The Lapps living in the Kola North became the subjects of the Moscow state, which is clearly shown in the "Painting of churchyards of Lapps." At the same time, our calculations do not confirm the point of view of Derzhavin V.L., who, having studied the same source inattentively, maintains that the double tribute was persisted in eastern Lapland until 1624 [25, p. 117]. In fact, the "Painting" says that the royal tribute gathered in 10 of the 14 Orthodox churchyards since 1613 already went to the tsarist treasury: "and from the year 121 till 132 the tsarist tribute ... is ...there for the sovereign." The receipt of the royal tribute in favor of the Moscow treasury is also recorded by the parish book of the Novgorod quarter of 1620/21: "From Tersk and the upper Lapland, from the baptized Lapps, the Danish king's tribute is gathered for the sovereign"⁴². Only the Lapps living the northwestern outskirts of the Kola North, from the Pazretsky and Nyavdemsky churchyards, continued to pay a tribute to the Danish kingdom and the Moscow state "with great need" in 1624. The Lapps of the Motovsky and Pechenga churchyards, which were in the possession of the Pechenga monastery, were in a special situation. If the first ceased to pay tribute to the Danes

⁴⁰ Datskii arkhiv. № 613, 615.

⁴¹ Datskii arkhiv. № 656.

⁴² Prikhodo-raskhodnye knigi moskovskikh prikazov... P. 319.

already in 1602 (without renewal in 1612), the second retained his obligations to the royal treasury also in 1624⁴³.

In response to the elimination of double tribute, Christian IV once again intensified the struggle for the eastern Lapland, and this time threatening Russia with the use of force. After Russia actually refused to negotiate, the Danish squadron in 1621–1623 started robbery attacks off the coast of Murman. The reason for this was the so-called "Clement Bloom case".

In winter of 1619–1620 the head of the Danish trade expedition, Clement Bloom, was detained in Kola. He traded in Pustozersk without the permission of the Russian government, in Pechora area, using false money from low-grade silver, modeled on Russian coins. Upon his return from Pustozersk, on his way back, Bloom decided to stay for the winter in Kola, although it was "not allowed by the tsar's decree to winter for the Danish Germans in the Kola prison". In Kola he acted suspiciously calling the Kola prison "our and the Danes' king common land"⁴⁴. After his detention, Bloom was sent from Kola for questioning to Arkhangelsk. The Russian government, reluctant to aggravate relations with Denmark, released Bloom to freedom. The Dane, saving himself, returned to his country, leaving his property in the Russian North.

Christian IV took the episode with Bloom's arrest as a personal insult and sent a squadron of warships to Murman with a formal pretext to compensate the losses of the Danish merchant, but in reality, with the aim of taking revenge in the struggle for the Lapland lands [2, Ushakov IF, v.1, pp. 99–101]⁴⁵. In 1621–1623 the Danish fleet crushed landings and seized ships, as a result of which the serious damage was done to the economic condition of the Kola North: The Danes brought with them various goods and valuables taken on Murman for the sum of more than 50 thousand rubles⁴⁶.

Against this background, Yu. Komissarov's statement that "for five centuries" the relations between Russia and Denmark "has never been aggravated by armed clashes and conflicts" seems very strange. [26, p. 93].

The Danish attack did not break the Russian positions in Lapland. After the Peace of Stolbov in 1617 with Sweden, Russia lost the most important Baltic lands together with access to the Baltic Sea. Under these conditions, the Russian government was forced to reorient its attention to the contact and trade and economic role of Arkhangelsk, Pomorye, and to strengthen the defense of the northern shores. In 1625, according to the decree of Tsar Mikhail Fedorovich,

⁴³ Sbornik materialov po istorii Kol'skogo poluostrova... Pp. 55–64.

⁴⁴ Russkie akty. P. 549.

⁴⁵ Russkie akty. Pp. 589–604.

⁴⁶ Russkie akty. P. 590.

the garrison in Kola was increased to 500 riflemen, and the number of cannons to 54 [2, Ushakov I.F., v. 1, p. 101]. This turned the Lapland problem into a serious military issue, which Denmark did not dare deal with.

Conclusion

Thus, our reasoning in the light of the presented methodology led to the conclusion that with the liquidation of the common district and the abolition of the double tribute in 1602–1613, Russia actually got a conditional border, which passed through the most western Orthodox churchyards — Nyavdemsky and Pazretsky (the Paz River area). From now on this line divided the territories of the collection of tribute, the territory of citizenship and possession. It should be said that here, for more than 400 years, there is a border, which, according to the precise observation of the Norwegian historian J.-P. Nielsen, is the oldest of the existing borders of Russia⁴⁷. However, until 1826, there was no strict demarcation line or any regular protection of it on the Lapland border. In bordering churchyards (Nyavdemsky, Pazretsky, Pechenga, etc.), the Lapps continued to carry a double burden of taxes, paying tribute to Russia and Denmark and acting as a kind of international buffer mechanism.

J.H. Lind's suggestion that the territories of the "Russian and Norwegian sedentary population" remained undivided until the demarcation of the border in 1826 [6, p. 142] seems unfounded due to the fact that the concept of "division" is connected here with the concept of "demarcation", although this is not the same thing. In the conditions of the northern climate and the lack of people, the local situation was still depleted and did not require immediate measures to "color" the very line of the Lapland border. The presence of a military fortification and a large garrison in Kola, even they were far from the border strip for more than 100 km, was enough to indicate the belonging of eastern Lapland to the Russian state. The main confirmation of the arisen border was the fall of the double tribute and the division of citizenship.

This is evidenced by the tradition of the annual arrival of a collector of tribute from the Danish kingdom to Kola, which, after the abolition of double tribute, turned into a peace-loving ceremony. According to the description of the Varangian Schulz Nils Knag, at the end of the XVII century, it looked like this: a tributor who came to Kola, referring to the Kola voivoda, said that the Danish king had instructed him to collect tribute from the "subjects of his royal majesty" in the Kola district. The voivoda answered that he did not receive any orders from the Russian tsar, and so he could not let collect the tribute. Then the treats, toasts in honor of the ruling monarchs, the exchange of gifts followed. A few days later, the foreigner was given a team of deer, and he left

⁴⁷ Sosedni na Krainem Severe... P. 368.

back to his country [27, Kaaran A., pp. 28–31]. Thus, the border line already completely determined the behavior of the Danish subject to the east of Pechenga.

Military and diplomatic success of Moscow in Lapland soon gained recognition in Western Europe. On the map of Russia, compiled in 1688 by G. Sanson, the Murmansk Sea was called the Moscow one [28, Minkin A.A., pp. 26–27].

The transformation of the Kola North from the border to the periphery of the Russian state was not a one-time act, as it is sometimes presented in historiography, but was the result of a long process. Formation of the boundary of the Russian state in Lapland was not completed in the Novgorod period. Only thanks to the nature of the strategy of the Moscow State, by 1613, it was possible to eliminate the double tribute of the Lapps and thereby to form the Lapland interstate border. This strategy included the involvement of the eastern Lapps in the Russian faith and the encouragement of the monastic colonization of the Kola North, the creation of military fortifications and the establishment of the voivodship in Kola, the provision of diplomatic pressure on Denmark and military resistance to it. These measures allowed to strengthen the authority of Muscovy in Northern Europe, to ensure the safety of Murmansk fisheries, to preserve the country's maritime communications during the temporary loss of access to the Baltic Sea.

At the same time, the existence of ongoing threat on the Murmansk coast did not allow to develop all-Russian international bargaining there and eventually led to its transfer to the mouth of the Northern Dvina.

Concluding a brief review of the history of the Lapland issue in the policy of the Moscow State, let us return to the beginning of the article and note that the first point of view about the appearance of the Russian border in Lapland in the Old Russian period, and the second point of view that connects this event with a later time (1826) should be questioned. We believe that the Russian border in Lapland appeared in the early XVII century. Further research will either confirm or disprove this position.

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SINGLE-INDUSTRY CITIES OF THE RUSSIAN ARCTIC

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Structural policy for the economic development of single-industry cities of the Arctic zone of the Russian Federation



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Abstract. The author's approaches to the study of the problem of the structural policy and the specifics of the formation of the infrastructure of single-industry cities on the territory of the Russian Arctic are presented for discussion in the scientific community. The author marks urgent problems in the structure of the economy and its individual elements, reveals resource

restrictions and specifics of infrastructure state of single-industry cities on the territory of the Russian Arctic. The author proves the expediency of the formation of new approaches to the construction of a model of economic development of single-industry cities based on innovations and individual regional competitive advantages. The author uses a complex analysis of the structural development of the economy of the Arctic zone.

Keywords: *structural policy, industrial policy, single-industry city infrastructure, the specifics of the formation of single-industry cities of the Arctic zone of the Russian Federation, resource restrictions, government regulation of single-industry areas*

Introduction

The development of a modern economy is impossible without structural changes. Therefore, one of the tasks of state structural policy is to effectively manage these changes. The state acts as one of the subjects of structural policy and, considering the hierarchy of state power in the RF, implemented at the regional and local levels and directly at enterprises, as a subject of structural policy, the state has a complex character [1, Gladysheva I.V, Verona E.N., p. 144]. Structural policy is understood as the intentions and interests of its subjects in relation to the development of those elements of the economic system that contribute to the solution of pressing problems of society, ensure the development and competitiveness of the economy, the formation of the necessary national, interindustry, intersectoral and regional proportions¹.

In terms of high importance of the territories of the Arctic zone of the Russian Federation in the strategic development of the country and ensuring its security, the development of a structural policy, the formation of the infrastructure of single-industry towns is a complicated and ambiguous process requiring special attention and special study.

¹ Структурная политика. URL: http://dic.academic.ru/dic.nsf/fin_enc/30034/ (Accessed: 14 February 2017).

General and regional problems of the territories of the Arctic zone of the Russian Federation

When developing and implementing structural policies, it is necessary to consider not only the objective factors of economic development, but also objective factors that reflect the peculiarities of the Russian Federation and its individual territories:

- the processes of globalization and localization (under the influence of sanctions);
- blurring the boundaries of social and economic systems;
- strengthening and development of new forms of competition for knowledge, new technologies, intellectual resources;
- acceleration of the technological development of the world economy;
- uneven innovation activity of objects and regions;
- climate change, population aging, health system problems, and global security challenges;
- systemic crisis of the Russian economy.

If we consider individual territories of the Russian Federation, common problems that are manifested at the country level are supplemented by regional problems:

- different conditions for the functioning of economic entities in the regions (climate, infrastructure, availability of resources, etc.);
- physical obsolescence of the park of technological equipment;
- technological backwardness of industrial enterprises;
- enterprises do not have their own financial resources, including working capital, funds for financing Research and Advanced Development;
- high cost of borrowed financial resources for the development and modernization of production, development of new products;
- low level of introduction of new "breakthrough" developments, technologies and low susceptibility of the real sector of the economy to the introduction of innovations;
- insufficiently effective mechanism of interaction between science and business in order to develop and introduce competitive technologies in production;
- low level of specialization and cooperation of enterprises, which leads to increased costs, reduces the flexibility of enterprises with the growth of uncertainty and instability of the external environment;
- insufficient level of competitiveness of the products;
- the shortage of highly qualified personnel (the change in the structure of industry must be accompanied by changes in the resource support for the development of processing activities, more so in the personnel supply) [2, Gladysheva I.V., p. 421].

Considering the Arctic region, it should be considered that its features in the context of climatic, ecological, geological and other characteristics are the initial prerequisites for significant risks of developing and using its potential.

The current geopolitical situation complicates the prospects for development and creates additional risks for the development of the Arctic for all participants. Against the backdrop of the

general crisis of the domestic economy, the problems and opportunities for the development of the Arctic mono-cities in Russia are also becoming more relevant today.

Factors and peculiarities of the mono-cities of the Arctic zone of the RF

In 2014 the list of mono-cities approved by the Government of the RF grew from 313 to 319 mono-cities, 14 of which are located in the Arctic zone (their quantity remained the same) (Figure 1.).

Within the framework of the state commission, the report "Mono-cities in the Arctic zone of the Russian Federation: problems and opportunities for development" has been prepared by the Center for the Operation of the State Commission for the Arctic Development in cooperation with the Institute for Applied Political Studies.

The rating was compiled on the basis of 11 indicators aimed at assessing the sectoral structure of economies, demographics, infrastructure security and budget characteristics of mono-cities (Figure 2).

As part of the study, an expert survey of business representatives working in the Arctic, heads of mono-cities of the Arctic zone of Russia, heads of executive authorities of the Arctic subjects, experts on mono-cities and the economy of the Arctic regions has been conducted. Official statistical data have been processed and systematized, those indicators have been selected that reflect the quality of life and the state of mono-cities (single-profile municipalities) in the Arctic.

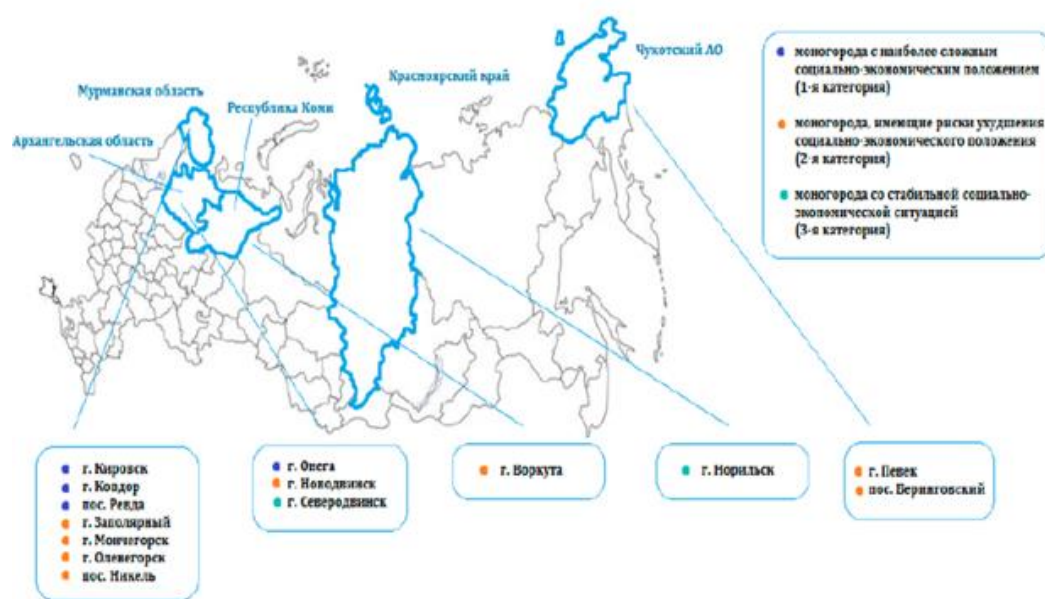


Figure 1. Mono-cities in the Arctic zone of the Russian Federation ²

² Reiting monogorodov Arkticheskoi zony Rossii po sotsial'no-ekonomicheskomu polozheniiu v 2016 g. URL: <http://arctic.gov.ru/News/ed1fcc72-8d75-e611-80cc-e672fe4e8e4e?nodeId=0778abc6-cd4b-e511-825f-10604b797c23&page=1&pageSize=10> (Accessed: 14 February 2017).

Наименование моногорода	Численность населения моногорода в 2015 г. (тыс. чел.)	Динамика численности населения моногорода (2002-2015 гг.) (тыс. чел.)	Коэффициент естественного прироста населения моногорода в 2014 г. (%)	Число лечебно-профилактических организаций на 100 чел. (ед.)	Общая площадь жилых помещений в среднем на 1 жителя моногорода (кв. м.)	Инвестиции в основной капитал моногорода за счет средств муниципальной бюджета (%)	Профицит / дефицит бюджета моногорода (%)	Наименьшее расстояние от моногорода до транспортного логистического хаба (км)	Транспортная инфраструктура хаба	Транспортная инфраструктура моногорода	Протяженность автодорог общего пользования местного значения (км)	Итоговое количество баллов	Позиция в рейтинге
г. Северодвинск	12	11	8	11	2	9	9	10	11	12	12	107	1
г. Норильск	11	12	12	9	6	10	12	1	9	10	11	103	2
г. Кировск	7	9	2	11	11	8	7	12	10	10	5	92	3
г. Мончегорск	9	6	7	9	7	11	2	8	10	10	8	87	4
г. Воркута	10	2	11	11	12	4	5	2	9	10	10	86	5
г. Новодвинск	8	10	6	10	1	7	4	11	10	12	6	85	6
г. Заполярный	3	5	10	11	8	12	6	5	10	11	3	84	7
г. Онега	5	8	5	10	5	3	11	3	12	12	9	83	8
г. Кондор	4	6	4	11	10	1	10	6	10	10	7	79	9
г. Оленегорск	6	7	9	9	4	5	1	7	11	10	4	73	10
пос. Ревда	1	4	4	11	3	6	8	9	11	9	1	67	11
пос. Никель	2	3	3	12	9	2	3	4	10	11	2	61	12

*В сводный рейтинг не были включены г. Певек и пос. Беринговский в связи с отсутствием официальных данных по многим показателям.

Figure 2. The general rating of the mono-cities of the Arctic zone on the social and economic situation, 2016³.

As a result, the researchers came to the following conclusions⁴:

1. The industrial structure of the economy of mono-cities of the Arctic zone is determined to a greater extent by their resource and raw materials base and is quite typical: there is a dominant (most often — raw materials) branch in which the city-forming enterprise operates, with the most widespread non-ferrous metallurgy, followed by coal industry. Disproportions in the structure of the economy of the Arctic zone of the Russian Federation in general and in mono-cities in particular are also confirmed by research [3, Ryabova L.A., Didyk V.V., Korchak E.A., Bashmakova E.P., Emelyanova E.E., p. 38], according to which "by industry specialization the Arctic mono-cities of the Russian Federation can be divided into 4 types: based on oil and gas production, mining, logging and timber processing, electric power engineering and shipbuilding".

In addition, it is noted that "mono-cities of the Russian Arctic are characterized by specialization in the exploitation of natural resources – 14 settlements (77.7% of their total number). Their majority (12, or 66.6%) specializes in the production of non-renewable resources

³ Reiting monogorodov Arkticheskoi zony Rossii po sotsial'no-ekonomicheskomu polozheniiu v 2016 g. URL: <http://arctic.gov.ru/News/ed1fcc72-8d75-e611-80cc-e672fe4e8e4e?nodeId=0778abc6-cd4b-e511-825f-10604b797c23&page=1&pageSize=10>. (Accessed: 14 February 2017)

⁴ Analiticheskii doklad «Monogoroda Arkticheskoi zony RF: problemy i vozmozhnosti razvitiia» URL: <http://www.arctic.gov.ru/FilePreview/ac6b705c-c774-e611-80cc-e672fe4e8e4e?nodeId=cc530731-da4b-e511-825f-10604b797c23> (Accessed: 12 February 2017)

(oil and gas and solid minerals — ferrous and non-ferrous metals, coal, etc. Most of the Arctic mono-cities (10 of 18) are based on the mining industry "[4].

These circumstances determine the homogeneity of the professional composition of the population and the low diversification of employment. The local budget fill rate and the improvement of the territories much depends on the financial state of the city-forming enterprise. The domestic market is rather unfavorable, and business structures, even from related industries, do not always find their niche in it. In the current situation, it is necessary not only to diversify the economies of single-industry cities, but also to support the development of medium and small industries in the dominant industry.

2. Arctic single-industry cities mainly demonstrate regression by demographic indicators: everywhere there is negative population dynamics, migration outflow is increasing, and only in a quarter of mono-cities a natural increase in population is recorded. Since the beginning of market reforms (from 1990 to 2013), the population in the cities of the Russian Arctic, included in the List of single-industry cities of Russia 2013, has decreased by almost 30%, i.e. about 300 thousand people. The only exception is the mono-cities of the Yamal-Nenets Autonomous District, the city-forming enterprises of which belong to the oil and gas industry [5, Didik V.V., Ryabova L.A., p. 86]. All this makes strong disproportion in the structure of employment and potentially will determine the decline in the capacity of city-forming enterprises.

3. At the moment the social, housing, communal and transport infrastructure is badly worn and does not create conditions not only for development, but even for a relatively comfortable living of the mono-cities of the Arctic. Public-private partnerships play a major role in their modernization and expansion. In monoprofile formations in which close cooperation of government and business takes place, these processes are faster and better. The most acute is the problem of providing the population with modern housing and communal infrastructure: unprofitable construction projects repel private developers, and investments of local authorities and town-forming enterprises cannot fully meet existing needs.

4. The transport system of the Arctic also needs to be developed, since the lack, limited or low quality of its facilities greatly closes producers (especially small and medium-sized) in single-industry cities to the domestic market and stops the production volumes due to colossal transport costs. The lack of communications, typical for the Russian Arctic, does not allow entrepreneurs to choose beneficial and convenient ways of transporting goods. There is a need either to create a capital-intensive infrastructure, or to co-finance the transportation costs of business of the Arctic mono-cities.

5. The absolute majority of mono-city budgets are scarce, and a tendency to deterioration of the situation is seen. At the same time, investing in fixed assets accounts for as much as 8% of all expenditures of mono-profile entities, that is, there is almost no financing for direct development at the expense of local budgets — little is being invested in the creation and modernization of the infrastructure and support for productive sectors.

The existence of such serious features of the economy of the single-industry cities of the Arctic zone leads to the need to classify them as a separate group of objects for which specific mechanisms of functioning, regulation and development assistance are needed.

***The tasks of forming the effective structural policy
for economic development of single-industry cities***

Thus, the question arises about forming a competent structural policy coordinated by the government of the country, regions, the administration of enterprises with respect to the sectoral, regional, industrial structure of the economy as a whole and its separate parts, considering the structure of income and expenditure, consumption, accumulation, other important parameters of the economy and the Arctic specificity in this particular case.

The state, having determined the right priorities and making the right choice, must create at a certain moment conditions for the formation of a new technological order in the economy. That, in turn, would stimulate market self-regulation and would lead to an increase in the activity of the entrepreneurial sector of the economy.

The problems of even small mono-cities cannot be solved at the regional level. As a rule, the task immediately becomes national in scale.

Therefore, the primary tasks for the formation of the effective structural policy at the level of the federal government should be the following:

1. Conducting comprehensive regular monitoring of the social and economic condition of the Arctic mono-cities based on a wider range of private and complex indicators and characteristics, which will allow to assess the current state of the economy and the infrastructure of mono-cities, and most importantly, to identify potential individual advantages and prospects for development. The overall rating of the Arctic zone mono-cities based on the social and economic situation, compiled in 2016⁵, does not allow obtaining reliable and adequate information due to the limited number of parameters used for monitoring and their too "broad" content aspect;

⁵ Reiting monogorodov Arkticheskoi zony Rossii po sotsial'no-ekonomicheskomu polozheniiu v 2016 g. URL: <http://arctic.gov.ru/News/ed1fcc72-8d75-e611-80cc-e672fe4e8e4e?nodeId=0778abc6-cd4b-e511-825f-10604b797c23&page=1&pageSize=10>. (Accessed: 14 February 2017).

2. Development of a comprehensive system for monitoring the effectiveness of government support measures, building a register of economic efficiency and management of single-industry cities, including those located in the Arctic zone, forming the basis for the best (successful practices) of "reloading" of mono-cities in order to stabilize and develop the social and economic status of mono-profile territories; the definition of effective measures and forms of state support, the volume of public investment, the cost of budgets of all levels for the implementation of potential structural projects in the territory of single-industry cities. This will allow us to assess the positions of mono-cities with respect to each other, their impact on the economy of the territory, general structural changes in their social and economic base, and then, based on monitoring results, considering risks and benefits, to forecast the dynamic shifts and to create timely tools for their regulation.

3. Creation of the model for assessing the effectiveness of government support measures (with the "inclusion" of specific multiplication parameters that consider the peculiarities of the Arctic mono-cities) and methodological tools for the implementation and application of this model. Both the evaluation model and the methodological tools should be harmoniously integrated into the general system, which was discussed above.

4. Estimation of the volume of necessary private investments considering the principle of complementarity of state financing, assessment of the possibility of district, regional, local authorities, attracting of appropriate private financing.

5. Development of programs for the formation and / or modernization of innovative, transport, energy, environmental, financial, social and organizational infrastructure appropriate to the specifics of the single-industry cities of the Arctic zone and to the current challenges to the real economy.

6. Development of the comprehensive program for the development of the Arctic mono-cities considering its harmonization with strategic documents of different levels and sector specificities;

7. Determining the cumulative effect from the level of economic development of mono-cities in general, as well as business and city-forming enterprises in particular for other regions of the country and other economic activities.

8. Evaluation of the social effect of possible structural projects; comparison of the potential social and economic effect from the implementation of structural projects with the scenario of inertial or innovative development of single-industry cities, the identification (confirmation) of the feasibility of carrying out of the structural policy on their territory.

Conclusion

Nowadays structural policy as the element of the state's economic policy is present practically in all theoretical and real models of state regulation of the market economy, but its potential for practical implementation has not been sufficiently used. Therefore, the overall economic task of the state's structural policy in the market conditions is the systematic maintenance of macroeconomic equilibrium, avoidance of undesirable disproportions; the main goal is to achieve on a planned basis the most effective use of resources available at the disposal of regions, including mono-cities, and competitive advantages. In our opinion, declarative statements mentioned at the IV International Forum: "The Arctic: Present and Future", in St. Petersburg in 2014, that "the final resolution of the forum with suggestions and recommendations will be the starting point for the formation of the agenda of the organizations participating in the development and implementation of various projects in the Arctic in 2015", should be implemented immediately. This will ensure effective state regulation in the sphere of sustainable development of the Arctic [6, Lukin Yu.F., p. 174].

At the same time, the need and strategic usefulness of the relevant activities and actions and the willingness to invest in these programs and projects is the basic understanding for all the participants (authorities, business community, society).

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The features of state and municipal management of the development of single-industry settlements in the Arctic zone of the Russian Federation



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Abstract. The article considers the current system of management of the development of single-industry settlements in the Arctic zone of the Russian Federation, the tools of strategic and program-target management of the development of single-industry cities are analyzed which are used at the state and municipal levels, the suggestions for improving the system of management of the Arctic cities are made. This system should consider both the specific character of development of each city, and to be linked with the ongoing government policy, the interests of local authorities, business and local communities. The methodology is based on the use of search and economic-statistical methods, method of comparative analysis. The main recommendations are the formation of a strategic vision for the development of promising sectors (types of economic activities) in monotowns, introduction of program-target management in the strategic planning of complex investment plans of monotowns, and elaboration of the concept of the informational platform of investment projects in single-industry cities.

Keywords: *single-industry city, the Arctic zone of the Russian Federation, the system of management of the single-industry city development, the tools of state support, strategic management*

The priorities for the development of mono-profile municipal entities and the implementation of state policy for the development of the Arctic zone today are on the agenda for all key participants of management in Russia.

Modern features and trends in the development of the Arctic mono-cities have similar features and problems inherent in most mono-profile entities in Russia, which include, among others:

- territorial-spatial distribution in sparsely populated areas and insufficiently favorable transport and geographic location;
- absence of the clearly systematized system of state policy of support of mono-cities (today there are more than 100 measures of state support);
- "personnel hunger" of the system of municipal authorities (MA) (employees do not have the necessary competencies to create a business environment conducive to development);
- the unfavorable investment climate and an underdeveloped institutional environment for doing business;

- the high level of passivity of the population who is not able and not accustomed to actively participate in the modernization of the cities in which they live and work.

At the same time, the specificity of the "northern" mono-cities of the Russian Arctic, connected with their location in regions with extreme climatic and natural conditions, leaves an imprint on the nature and area of their development, the functioning of key life support systems. For such cities, there is a need to work out special effective development models based on new investment and town-planning approaches to creating a new quality of the urban environment, finding mechanisms for keeping the resident and attracting new people, and creating a favorable investment and business environment (Figure 1).

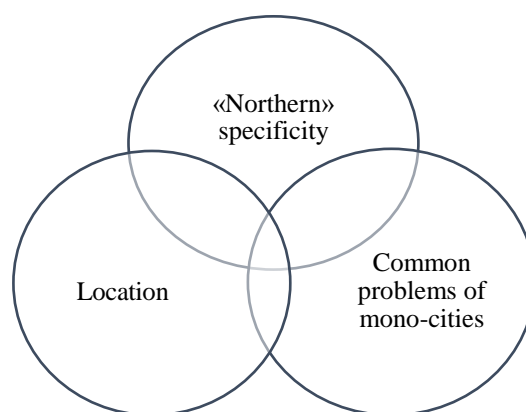


Figure 1. The paradigm of the development of the Arctic mono-cities.

There are 14 mono-cities¹ in the Russian Arctic, half of which are located in the Murmansk region, 3 in the Arkhangelsk region, 2 in the Chukotka autonomous district, one in the Krasnoyarsk Territory and one in the Komi Republic [1].

Analysis of the peculiarities of the development of the Russian mono-cities of the Russian Arctic and the study of the works of the Russian scientists [2, Gerashchenko D.A.] made it possible to determine a range of actual issues, including the assessment of problems and limitations of the social and economic development of the mono-cities of the Arctic zone of the Russian Federation, which includes the following:

Limitations:

- unfavorable climatic conditions;
- limited transport accessibility;
- the homogeneity of the professional composition of the population and the low diversification of employment;
- low capitalization of territories;

¹ E.g. Kirovsk, Onega, Revda, Kovdor, Zapoliarnyi, Monchegorsk, Novodvinsk, Olenegorsk, Beringovskii, Nickel, Severodvinsk, Norilsk, Pevek, Vorkuta (Source: Analiticheskii doklad «Monogoroda Arkticheskoi zony RF: problemy i vozmozhnosti razvitiia», IPPI, 2016)

- low possibility of diversification of production in the majority of mono-cities due to resource constraints;
- high social burden on business due to the need to implement social payments stipulated by the status of the northern territories;
- the need to develop specific management models for each particular mono-city.

Problems:

- low level of development of transport and logistics;
- migration outflow and low birth rate;
- deficiency of municipal budgets, high level of subsidy;
- the problem of finding investors and coordinating the financial and economic interests of investors, regions, the state and the population;
- poor development of the infrastructure complex, including high wear of funds, housing and communal services and social services;
- weak involvement of small and medium-sized business in solving key problems, inefficiency of interaction in the chain "power — business — residents — science";
- limited types of economic activity;
- lack of competence among municipal employees to accompany the implementation of complex projects and development programs;
- lack of unified and comprehensive methodology for monitoring social and economic development and the risks of determining competitive advantages for the subsequent adoption of effective management decisions.

It should be noted that at the level of regional governments, a whole range of activities aimed at supporting the development of single-industry cities is being implemented. One of the priority tasks that are on the agenda are modernization and increasing the profitability of the city-forming industries, improving the infrastructure of cities, creating programs for retaining the population, improving the quality of the living environment.

The problem of ineffectiveness of strategic planning documents for mono-cities

Most of the Russian Arctic mono-cities do not have worked out development strategies that define both the priorities and goals for long-term development, and link and form continuity with state policy at the regional and federal levels. In the Onega district of the Arkhangelsk region, the work is underway to develop the Strategy for the development of the Onega district until 2030². In the mono-cities of the Russian Arctic, there such strategic and policy documents as, for example:

1) Strategy of social and economic development of the municipality of the urban district

"Vorkuta" for the period until 2020³. Priority areas:

- economic development;

² Strategiiia razvitiia raiona: http://www.onegaland.ru/novosti/13910/?sphrase_id=22089

³ Reshenie Soveta MO gorodskogo okruga "Vorkuta" ot 23.12.2014 N 638 Ob utverzhdenii Strategii sotsial'no-ekonomicheskogo razvitiia munitsipal'nogo obrazovaniia gorodskogo okruga "Vorkuta" na period do 2020 goda.

- social development;
- development of the municipal management system;
- ensuring the safety of the population.

2) The program of social and economic development of the municipal formation city of Norilsk until 2020. Priority areas:

- activation of the demographic policy;
- creating conditions for improving the environmental situation in the city;
- formation of comfortable urban environment, improvement of objects and areas of the city;
- modernization of urban and social infrastructure, implementation of energy saving;
- attraction of investments and introduction of innovations.

3) The program of complex development of municipal infrastructure systems of the urban settlement Revda of Levosersky district⁴.

The amount of financing of the Program is 1,193,078 thousand rubles, more than 50% of this sum are non-budget sources⁵. The schemes for heat supply, water supply and sanitation also approved in Revda.

The composition of municipal programs implemented in mono-cities (or municipal districts) also has many similar areas. For example, in the city Pevek and in the Chaun municipal district, including Pevek, municipal programs are largely socially oriented and aimed at infrastructure development (Figure 2).

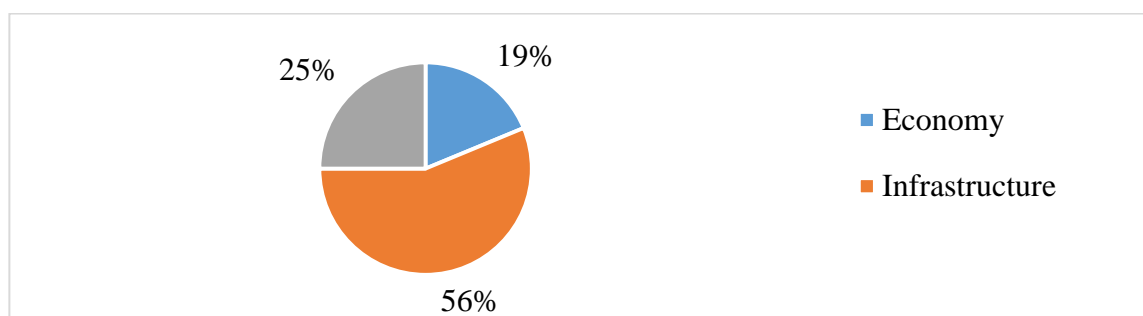


Figure 2. Structure of the approved municipal programs of the city Pevek and Chaun municipal District in the main areas of social and economic development, %

At the same time, the composition of the municipal program of the city Kirovsk covers a wider range of branches of social and economic development of the city (Figure 3).

⁴ Reshenie Soveta deputatov ob utverzhdenii Programmy kompleksnogo razvitiya sistem kommunal'noj infrastruktury municipal'nogo obrazovaniya gorodskoe poselenie Revda Lovozerskogo rajona na period 2011 – 2013 gody i na perspektivu do 2020 goda ot 30.12.2011 №137-02. (Source: http://www.revda51.ru/shemy_i_programm/programma_komplj/)

⁵ Sources of funding for the Program: federal funds — 38 447 thousand rubles; regional budget — 322 935 thousand rubles; local budget — 211 456 thousand rubles; non-budget sources — 620 240 thousand rubles.

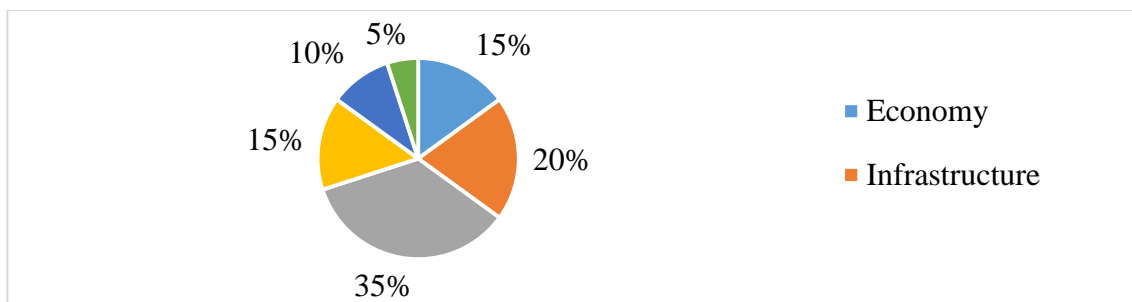


Figure 3. Structure of approved municipal programs of the city of Kirovsk in the main areas of social and economic development, %

The currently implemented programs for the development of mono Orange are cities in the regions rely more on federal support measures, which account for 80% of the total project implementation costs. Nowadays most of the projects concern the solution of independent industry problems.

According to the report of the IITP, 3 of 14 arctic mono-cities had the surplus budget in 2015, and they also had a potential opportunity to invest additional funds in the development. For the most part of mono-cities, the predominance of gratuitous receipts into the budget structure is typical (Figure 4).

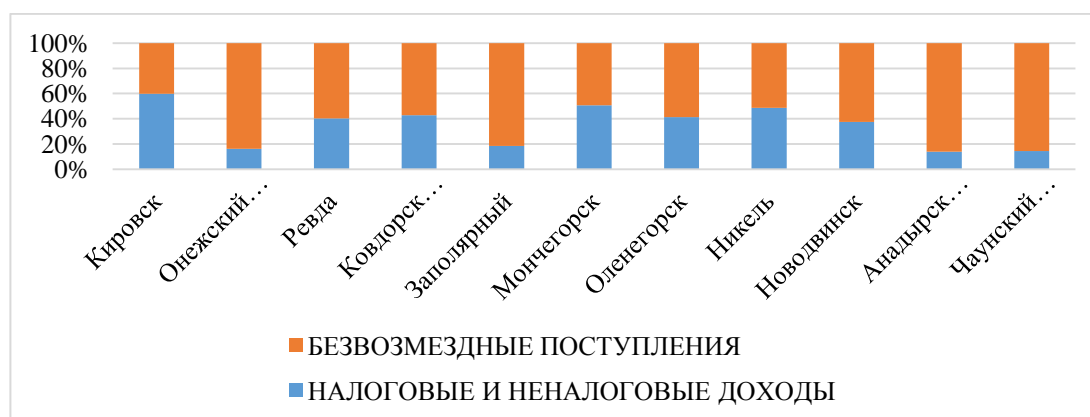


Figure 4. Structure of incomes of municipal entities of the Russian Arctic, according to data on the execution of budgets for 2015, %.

Orange means gratuitous receipts, and blue means taxes and other types of income.

Programs of economic orientation include both support for the development of SMEs, and the development of tourism, the implementation of the project "Salla Gate — Partnership in Business and Tourism". The city has approved programs aimed at increasing the budget efficiency, supporting of socially-oriented NGOs, and protecting the environment. There are also 10 departmental target programs, to a greater extent, in the social sphere and the development of the city's infrastructure complex.

Similar diversification of municipal programs is inherent in the city of Onega, the administrative center of the Onega municipal district of the Arkhangelsk region.

Certain problems that are typical for the Arctic monocities, are related to the quality of the development of engineering communications schemes, which not all municipalities have. Among monocities of the Russian Arctic, the following ones have approved town-planning documents, engineering communications schemes:

- Kirovsk (Documents of the territorial planning of the municipal entity⁶);
- Zapolyarny (Master Plan and Rules for Land Use and Development of municipal entity⁷);
- Kovdor (Heat supply scheme of the municipal entity⁸);
- Monchegorsk (Master Plan and Rules for Land Use and Development of the municipal entity⁹);
- Novodvinsk (Master Plan and Rules for Land Use and Development of the municipal entity¹⁰);
- Olenegorsk (Master Plan¹¹);
- Nickel (Master Plan and Rules for Land Use and Development of the municipal entity¹², supply scheme¹³);
- Severodvinsk (Master Plan and Rules for Land Use and Development of the municipal entity¹⁴);
- Norilsk (Master Plan and Rules for Land Use and Development of the municipal entity¹⁵);
- Vorkuta (Master Plan and Rules for Land Use and Development of municipal entity¹⁶).

⁶ Reshenie Soveta deputatov «Ob utverzhdenii dokumentov territorial'nogo planirovaniia munitsipal'nogo obrazovaniia gorod Kirovsk s podvedomstvennoi territoriei» №19 ot 21.05.2010.

⁷ Reshenie Soveta deputatov № 94/18-11 ot 29 apreliia 2011 goda Ob utverzhdenii General'nogo plana i Pravil zemlepol'zovaniia i zastroiki munitsipal'nogo obrazovaniia g. Zapoliarnyi Pechenskogo raiona Murmanskoi oblasti.

⁸ Postanovlenie № 618 ot 17.08.2016 Ob utverzhdenii skhemy teplosnabzheniia territorii munitsipal'nogo obrazovaniia — gorodskogo okruga Kovdorskii raion Murmanskoi oblasti na period do 2027 goda (aktualizatsiia na 2017 god)

⁹ Pravila zemlepol'zovaniia i zastroiki munitsipal'nogo obrazovaniia gorod Monchegorsk s podvedomstvennoi territoriei (Utverzhdeny resheniem Soveta deputatov goroda Monchegorska ot 05.06.2013 №39); Reshenie ot 23.12.2010 №108 Ob utverzhdenii general'nogo plana n.p. gorod Monchegorsk (administrativnyi tsentr okruga) i general'nogo plana gorodskogo okruga «gorod Monchegorsk s podvedomstvennoi territoriei».

¹⁰ Reshenie vneocherednoi deviatoi sessii Gorodskogo Soveta deputatov munitsipal'nogo obrazovaniia «Gorod Novodvinsk» ot 18.06.2014 № 48 «Ob utverzhdenii General'nogo plana munitsipal'nogo obrazovaniia «Gorod Novodvinsk», Pravil zemlepol'zovaniia i zastroiki munitsipal'nogo obrazovaniia «Gorod Novodvinsk».

¹¹ General'nyi plan gorodskogo okruga gorod Olenegorsk s podvedomstvennoi territoriei utverzhdenyi resheniem Soveta deputatov goroda Olenegorska ot 02.02.2011 № 01–04rs «Ob utverzhdenii general'nogo plana gorodskogo okruga gorod Olenegorsk s podvedomstvennoi territoriei» (v redaktsii resheniia Soveta deputatov goroda Olenegorska ot 01.06.2015 № 01-36).

¹² Ob utverzhdenii General'nogo plana i Pravil zemlepol'zovaniia i zastroiki munitsipal'nogo obrazovaniia gorodskoe poselenie Nikel' Pechenskogo raiona Murmanskoi oblasti «02» maia 2012 g. № 42.

¹³ Postanovlenie №56 ot 05 avgusta 2014g. Ob utverzhdenii skhemy teplosnabzheniia munitsipal'nogo obrazovaniia gorodskoe poselenie Nikel' Pechenskogo raiona Murmanskoi oblasti do 2028 goda.

¹⁴ Reshenie gorodskogo Soveta deputatov № 8 ot 28.03.2013 g. Ob utverzhdenii general'nogo plana munitsipal'nogo obrazovaniia «Severodvinsk»; Reshenie gorodskogo Soveta deputatov № 147 ot 31.10.2007 g. Ob utverzhdenii Pravil zemlepol'zovaniia i zastroiki Severodvinska (I razdel – gorod Severodvinsk).

¹⁵ № 16–371 ot 16.12.2008 Ob utverzhdenii General'nogo plana gorodskogo okruga – munitsipal'nogo obrazovaniia gorod Noril'sk; № 22–533 ot 10.11.2009 Ob utverzhdenii Pravil zemlepol'zovaniia i zastroiki munitsipal'nogo obrazovaniia gorod Noril'sk.

¹⁶ Reshenie ot 29.11.2012 g № 193 Ob utverzhdenii Pravil zemlepol'zovaniia i zastroiki munitsipal'nogo obrazovaniia gorodskogo okruga «Vorkuta»; Reshenie Soveta MO gorodskogo okruga «Vorkuta» ot 04.10.2010 № 500 Ob utverzhdenii general'nogo plana gorodskogo okruga «Vorkuta».

Improving the effectiveness of municipal management

Administrations of many mono-cities, nevertheless, introduce modern practices contributing to improve the efficiency of municipal management, to involve local communities in the management process. This includes the monitoring of the quality of financial management, assessing the effectiveness of the quality of municipal management, assessing the regulatory impact, the introduction of a tool for organizing TSG, the formation of reserves of management personnel.

Interesting approach to improving the effectiveness and control of the development and implementation of municipal programs can be noted in the city of Olenegorsk. For example, the Decree of the Olenegorsk City Administration has approved the Regulations on the Program-Target Council of the municipal entity Olenegorsk with its subordinate territory¹⁷. The Program-Target Council of the municipal entity of the city of Olenegorsk with its subordinate territory, is a standing collegial advisory body formed to improve the process of forming long-term and departmental target programs of the municipal entity (hereinafter referred to as target programs), to increase the effectiveness of their implementation.

One of the priority tasks for the formation of the state policy in the development of the Arctic monocities should be the determination of the place and role of the cities in the system of resettlement and allocation of productive forces [3, Kuznetsov S.V.]. The high level of "urbanization" and low population density (high dispersion in the territory) determine the role of monocities as the main economic centers of the Arctic macroregion. One of the priority areas of the development is the formation of them as personnel, technology and service centers for the development of the Arctic territories [4, Pilyasov A.N.].

The development of the Arctic monocities as supporting economic centers of the Russian Arctic stipulates the formation of production clusters in them and the formation of an integrated approach to the development of the territory. The promising development of monocities will allow:

- to provide personnel potential for the development of territories for long distances by road building and creation of helicopter platforms, to provide service and repair of various technics within a zone of transport accessibility;
- to guarantee highly professional emergency medical care, both to the city people and residents of sparsely populated and shift camps;

¹⁷ Postanovlenie Administracii goroda Olenegorska ot 28.09.2012 № 347 Polozhenie o Programmno-celevom sovete municipal'nogo obrazovaniya gorod Olenegorsk s podvedomstvennoj territoriej.

- to create educational, scientific and production centers necessary for studying and developing the Arctic zone;
- to create the conditions for leisure, creative expression and various forms of social activity necessary for the full development of human potential;
- to create conditions for a full and comfortable residence of families with children, which significantly reduces staff turnover and improves the staff quality.

The second important task is the formation of a comfortable living environment. The leading factor in the development of the cities in this case will be the active introduction of advanced technologies in the fields of energy, transport, buildings and facilities, health and education, the development of environmentally friendly elements of the urban environment. The northern conditions necessitate the use of innovative approaches to the development of communications and urban infrastructure, increasing their wear resistance, reducing the costs of municipal funds for repairs and preventing the consequences of accidents.

The third actual task is the need to optimize and systematize existing measures of state support for monocities, including the Russian Arctic, which do not have a single methodological and substantiating basis and a clear differentiated approach to their arranging, instruments for monitoring and control of their implementation. The identified problems faced by federal executive bodies in providing state support to monocities are as follows:

- absence of "anchor projects", which can be realized in the given territory, i.e. for the development of which the municipal entity has corresponding competitive advantages. In some CIPs, the choice was made in favor of creating a new branch of the economy for the given territory, which is associated with the enormous costs of budgetary and extrabudgetary funds. At the same time, the municipal entity could not have a clear competitive advantage allowing to assume the unconditional success of these large projects [5, Nikiforova L.Yu.];
- low qualification of employees of local self-government bodies engaged in the development and implementation of instrumentation;
- absence of active position of local self-government bodies in the development of small business, which is the most important one in small single-industry towns;
- in some cases, it is impossible to establish working contacts with the town-forming enterprise;
- absence of scientifically grounded approaches to the allocation and classification of monoprofile municipalities for the purpose of further developing an effective state policy for their development and the formation of a system for managing the development of single-industry towns.

In these conditions, it is necessary to form a unified management system for the development of monocities, which should be clearly built and supported at the state level. The application of existing state support measures, including the possibility of establishing Priority

Social and Economic Development Area (PSEDA) in the Arctic monocities, it is necessary to structure, to select, based on the specifics of the development of the Arctic monocities, and to form a comprehensive plan (program) for their application.

The development of northern monocities will depend on the implemented investment projects and a well-thought-out system of state support measures. First, it is necessary to revise the system of selection and financing of investment projects in order to simplify them. Secondly, for monocity administrations it is necessary to develop methodological recommendations on a single list of financial and non-financial measures of state support in the line of federal executive authority and development institutions.

Managing the development of the Arctic monocities should be a coordinated and well-planned system of interactions of all levels of government, development institutions, commercial banks, business, local people.

At the level of the Government of the RF, the Federal Design Office was launched in accordance with the Resolution of the Government of the RF "On the organization of project activities in the Government of the Russian Federation" dated October 15, 2016, No. 1050, project groups were organized on priority areas of strategic development, including monocities, methodological recommendations approved for the introduction of project management in the executive branches and after the completion of the priority project (program).

In this regard, there is a need for competent use of tools and methods of project management in the implementation of major government programs in the strategic management system. The implementation of the program and project management will allow to evaluate the effectiveness of creating of the special economic zones, industrial parks, territories for priority social and economic development, and also to monitor the implementation of the passport of the priority program the Integrated development of monocities (approved by the Presidium of the Presidential Council for the Strategic Development and the Priority projects on November 30, 2011 No. 11).

Nowadays the Monocity Development Fund has been functioning since 2015, its main goal is to assist in the development of the infrastructure and diversification of monocities with the aim of stabilizing their social, demographic and economic status and attracting investments in monocities with the most difficult social and economic situation. The fund operates in single-industry cities with the most difficult social and situation (99 monocities, according to the Government's order No. 1398-p dated July 29, 2014, including the monocities of the Russian North).

The organizational structure of the project management system for the Monocity Development Fund is presented in Figure 5.

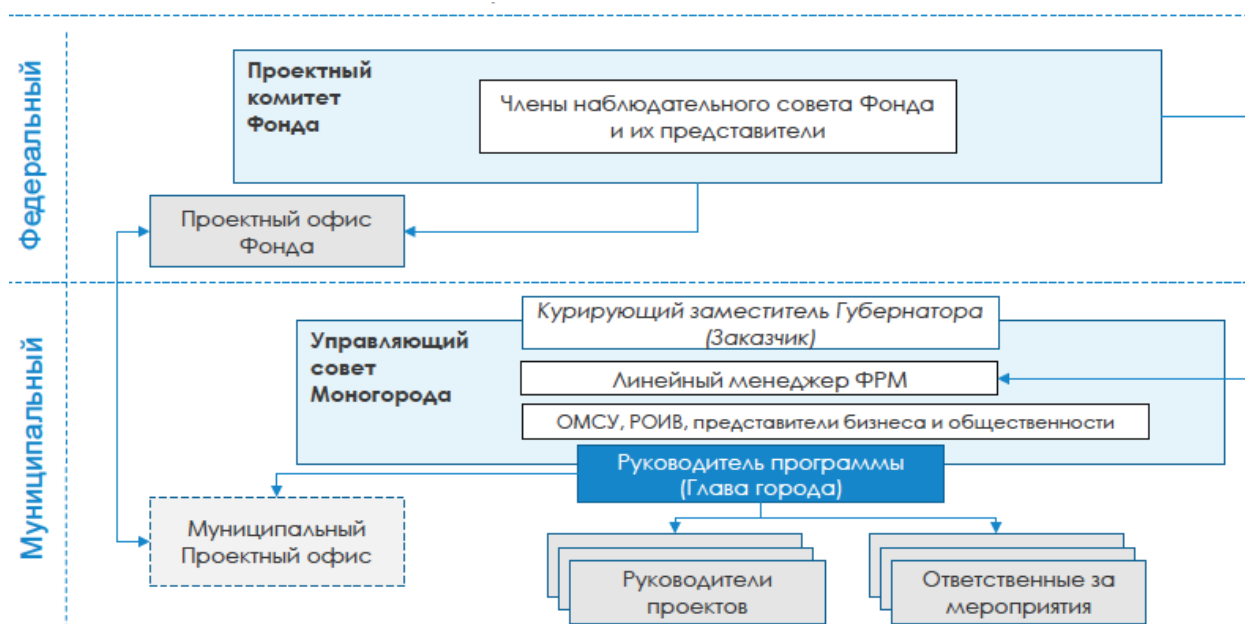


Figure 5. Organization of the project activity of the Monocity Development Fund

The specifics of the development of Arctic monocities necessitate the development of coordinated strategies and plans for their implementation, with the introduction of a program-targeted management.

In our opinion, monocity development strategy prepared by the city administration should consider the interests and prospects of the city-forming enterprise in this monocity and, thus, determine the plan for implementing the strategy based on the project management approach. According to the world practice, the cities with the highest joint interest from both the state and the city-forming enterprise turned out to be the most successful in solving the problems of the monocity. At the same time, the effectiveness of the current management policy for the development of monocities will include a set of measures aimed at supporting the creation and development of industrial parks, technoparks, innovative infrastructure and creating living conditions for monocities.

The projects for the integrated development should be worked out and implemented on the territories of monocities.

Conclusion

At the intermunicipal level, it is advisable to create a single coordinating management company (the corporation of the development of the Arctic monocities), but 100% of shares will

belong to the Government of the Russian Federation, which manages the development of monocities, including:

- participation in the development and implementation of territorial and sectoral development strategies;
- development of concepts, business plans, programs for implementing of sectoral and infrastructure projects of IDT, development of investment attraction plans;
- initiation and structuring, the organization of economic and legal advice in the preparation of the PIDT;
- creation of design offices for the implementation of PIDT;
- monitoring of progress in the implementation of activities and projects included in the List of Activities and PIDT;
- forecasting and monitoring of complex social and economic development of monocities;
- interaction with federal executive bodies and state authorities of the Arctic subjects of the Russian Federation, key business structures on issues related to the functioning and development of monocities;
- providing information support to state authorities and local self-government regarding the development of monocities;

There is no one-size-fits-all approach to managing the development of monocities, as it is necessary to consider the specificity of the development of a monocity: its location, economic structure, social status and the readiness of monocity administrations to pursue a policy aimed at maintaining and implementing investment projects.

Special attention should be paid to the organization of the system of control and expenditure of budgetary funds. Due to the lack of the responsibilities of the sectoral federal executive authorities to provide information to the SASM, it is quite difficult to assess the effectiveness of financial support measures. Moreover, key indicators of the effectiveness of the implementation of state programs should be reviewed, as well as subsidies for supporting the construction of innovative infrastructure and ongoing investment projects.

The development of investment projects in monocities depends on the effectively built system of interaction between regional, municipal executive bodies, development and business institutions. And this, in turn, will in the future determine the increase in mobility of labor resources of monocities, stimulation of voluntary relocation to settlements with high potential for social and economic development and centers for economic growth.

The solution of such a problem as diversification of economy of monocities should be built only on the basis of a comprehensive analysis of all internal and external factors of development of each particular city, its competitive advantages, opportunities and constraints of development.

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YAMAL-NENETS AUTONOMOUS DISTRICT

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Models for development of resources and territories of the Yamal-Nenets Autonomous District¹



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Abstract. Challenges and threats related to the sustainable development of the Arctic zone of the Russian Federation (AZRF) dictate the need to study the fundamental laws of evolution and current state of the structures and processes of spatial development of AZRF, the development and scientific substantiation of methodology, methods and practical approaches to the formation of alternative

(innovative) models of spatial ecological and economic development of the coastal and inland territories, including urban development, adaptation of existing methods of management. The study was conducted with use of the historical and comparative method, presupposing identification of common features in historical events in different periods of development of resources and territory of the Yamal-Nenets Autonomous District. Also, the economic models were considered which were used in different historical periods in terms of their influence on the life of the population. As a result of the study, a pattern of development of Arctic territories depending on the targets of their development is discovered, the suggestions for the formation of the basic principles of the creation of new models of the spatial development of the Arctic regions are offered, from the point of view of the invariance of the innovative way as condition for sustainable development of the Russian Arctic.

Keywords: *The Arctic, the Yamal-Nenets Autonomous District, development models, sustainable development, degradation of the spatial structure, livelihoods of the population, coastal and inland areas*

The diverse contexts of different historical periods of the development of the Russian Arctic, which sometimes have contradictory goals, methods and ways for achieving them, have formed a heterogeneous focal type of settlement and placement of productive forces, the internal disparity of the spatial matrix of the Arctic zone of the Russian Federation (AZRF).

The transformation of business conditions as a result of the change in political regimes, economic and technological structures, depletion of resources, sociocultural innovations and globalization, significantly worsened the ability of the single-commodity, mainly raw-material economy of the Russian Arctic regions, lowered profitability, and in a number of industries made further activity as economically impractical.

The economy of previously prosperous cities and villages in course of time ceased to meet the needs of society and acquired a degrading nature. These process, in turn, had a significant

¹ The study was carried out within the framework of the project of the RSSF №16-02-00741 "Life activity of the permanent population in the coastal zones of the Arctic in the current conditions of industrial development of the macroregion".

impact on the formation of alternative models of vital activity of the resident population of the Russian Arctic, which in large part begins to consider the possibility of changing places of residence to more favorable regions [1, Kibenko V.A.], and at the worst, the elimination processes begin.

The dynamics of the population size of the Arctic subjects since the 1990s demonstrates this well (Table 1). The decrease in population was typical for all regions, except for Yamal-Nenets Autonomous District. Now in some regions, stabilization and population growth has been observed (in the Krasnoyarsk Territory, the Republic of Sakha (Yakutia)), but this does not occur in the Arctic territories. At the same time in the Yamal-Nenets Autonomous District (YNAD, Yamal) the decline has begun, despite powerful development of industry and implementation of major investment projects.

Table 1

The dynamics of the population of the Arctic regions of the Russian Federation

The subject of RF	12.I. 1989	9.X. 2002	14.X. 2010	1.I. 2013	1.I. 2014	1.I. 2015	1.I. 2016	+ / - *
Murmansk region	1146.8	892.5	795.4	780.4	771.1	766.3	762.2	- 384.6
Arkhangelsk region without NAD	1515.4	1294.9	1185.5	1159.5	1148.8	1139.9	1130.2	- 385.2
Nenets Autonomous District	54.8	41.5	42.1	42.8	43.0	43.4	43.8	- 11
the Krasnoyarsk Territory	3027.6	2966.0	2828.2	2846.5	2852.8	2858.8	2866.5	-161.1
The Yamal-Nenets Autonomous District	486.2	507.0	522.9	541.6	539.7	539.9	534.1	+ 47.9
the Republic of Sakha (Yakutia)	1081.4	949.3	958.5	955.6	954.8	956.9	959.6	- 121.8
the Chukotka Autonomous District	157.5	53.8	50.5	50.8	50.5	50.5	50.2	- 107.3
Total losses: 1 123.1 thousand people								

* «+» growth, «-» decline of population in 1989 to 2016.

The current situation, the priorities of Russia's state policy in the Arctic² (the Arctic Strategy) determine the objective relevance and predetermine the scientific problems and the importance of research on a comprehensive scientific and theoretical analysis of the fundamental laws of evolution and the current state of structures and processes of spatial development in the Russian Arctic [2, Pavlenko V.I., Podoplekin A.O.], development and substantiation of methodology, methods and practical approaches to:

- specialization of perspective support zones of territorial development, with account of the priorities of industrial and infrastructural development of the macroregion;

² Strategy of the development of the Arctic zone of the Russian Federation and ensuring of the national security for the period up to 2020, is approved by the President of Russia V.V. Putin on February 20, 2013.

- formation of the foundations of sustainable livelihoods of the permanent population in conditions of natural, geoclimatic, ecological, economic, infrastructural, social and ethno-cultural specifics of the macroregion;
- creation of alternative (innovative) models of spatial ecological and economic development of coastal and continental territories, including urban development, adaptation of existing management methods, including the principles of integrated management of coastal territories and coastal waters.

The development of conceptual approaches to understanding the role of the Arctic and the North as a special area of national development belongs to academicians G.A. Agranat [3] and S.V. Slavin [4]. Academician A.G. Granberg [5] has become the consistent supporter of the interdisciplinary synthesis of sciences, studying the spatial patterns of regional development. The civilizational approach for the comprehensive study of the northern regions has been proposed by Academician V.V. Alekseev [6].

Considering the fundamental works, certain aspects of managing economic development based on models of rational nature management in the coastal zone of the European North of Russia were considered in the works of the researchers of the Kola Science Center [7, Matishov G.G., Denisov V.V., Jenyuk S.L.]. The works of the Arkhangelsk Scientific Center substantiate the necessity of concentrating the scientific potential of Russia as a condition for the effective implementation of the strategy for the development of the Russian Arctic and the consolidation of its geopolitical positions in the macroregion [2, Pavlenko V.I., Podoplekin A.O.]. The Scientific Center for the Study of the Arctic (Salekhard) is developing scientific and methodological approaches to the formation of principles and methodology for the design of regional innovation systems in the Russian Arctic in the context of a multilevel innovation policy using specific models of innovative development of local innovation systems [8, Detter G.F., Tukkel I.L.].

In general, at various levels of government, the measures are taken to improve the efficiency of the development of territories in relation to system-wide goals through spatial planning and the development of various concepts and strategies and spatial planning schemes.

Methods of the project RGNF № 16-02-00741 "Vital activity of the permanent population in the coastal zones of the Arctic in modern conditions of industrial development of the macroregion" include desk, field and sociological research. The research uses general scientific methods, including analysis of literature, statistical materials, documents of strategic and territorial planning of the subjects of the Russian Arctic, scientific literature, as well as a historical and comparative method that involves the identification of the common features in historical events of various periods of development of resources and territories of Yamal-Nenets

Autonomous District, as well as the economic models applied in different historical periods from the point of view of their influence on the vital activity of the population.

As a result of the formation and analysis of historical information about the origin and the economic activities of the Yamal settlements, the analysis of strategic planning documents for federal and regional authorities, as well as local government bodies at the territory of the Yamal-Nenets Autonomous District, including the territorial planning schemes, this article will show the intermediate results of the study of the economic models of the development of resources and territories of the Yamal-Nenets Autonomous District, the areas for the formation of the foundational principles of the creation of new models for the spatial development of Arctic regions are formulated, which take into account the challenges of the time.

The final result of the project¹ will be the development and justification of the scientific and methodological approaches, scientific and practical mechanisms for the implementation of innovative models of spatial ecological and economic development of coastal and continental territories, including urban development in the support zones of the long-term industrial and infrastructure development of the Russian Arctic.

Historical models of development

The Mangasea period. Until the first decades of the XX century the territory of Siberia, the Arctic, including the Yamal-Nenets Autonomous District, was mainly developed as a result of trade and commercial colonization by the Russian merchants and industrialists engaged in harvesting furs, sea animals and fish, and ore prospecting expeditions. The Mangasea period begins at the end of the XVI century. At the same time, historians identify the Novgorod and the Moscow periods that preceded the Mangasea, but they are not considered in this article.



Figure 1. View of Mangasea. Reconstruction of Belov M.I.

With the movement of industrialists to the east, the Mangasea sea route had been forming, it was the first prototype of the Northern Sea Route. The city of Mangasea was founded in 1601, it received the official title "Golden-boiling land of the sovereign" (Figure 1). The favorable geographical position on the routes from Muscovia to Siberia and, most importantly, the richest fur trade became the basis of the prosperity of the city and particular attitude to it. During the period of prosperity of Mangasea the dozens of buildings appeared: churches, barns, houses. The detachments of industrialists went from here to investigate new lands in Taimyr and in the lower reaches of Yenisei, they discovered Yakutia and compiled the first map of the Lena River. Trade ties of the city went far beyond Russia: through the pomor cities, it was connected with large companies of the Western Europe. From Mangasea annually from 100 to 150 thousand of skins of soft pelt (sables, arctic foxes, foxes, beavers) was exported, which accounted up to 20% of the revenues of the state treasury. In Mangasea, for the first time, construction technologies on permafrost were developed, and foundry production was carried out. But as a result of a number of measures of the economic activity in the Arctic from the state side and irrational nature management of entrepreneurs, already in the second half of the XVII century, the trade did not bring the same incomes, the city began to empty out, the trade routes shifted to Yenisei and Lena [9].

The Obdor period. The extinction of Mangasea gave rise to the economic development of Obdorsk (established in 1595), which earlier served as a customs outpost and a transfer point. The Obdor period of the development of Yamal can be dated by the beginning of the XVIII century, when the state took control over all the meridional trade routes in the region (maritime, over-stone) [10, Mukhina E.V.]. Obdorsk started to function within the Tobolsk trade, which was oriented to the intra-Siberian market. The movement of goods was changed to a latitudinal direction along the rivers Ob, Irtysh, Tobol, Tura. The nature management was completely traditional: reindeer husbandry, fishing, fur trade. In the XIX century there was the intensification of the development of the region, its inclusion in the all-Russian modernization processes. By the beginning of XX century from Obdorsk annually up to 200 thousand poods of fish and about 50 thousand fur skins were exported to the markets.



Figure 2. The Obdorsk Fair

Trade turnover amounted to large amounts at that time — hundreds of thousands of rubles in silver and gold. Market relations increasingly penetrated and deepened in the local economy, affecting the traditional way of life of aboriginal people. The social and cultural development of the territory was going on, as well as the strengthening of the church role. The Obdorsk Fair (Figure 2) formed the merchant class, villages were developing, so this period can be considered as a period of sustainable development, which ended with the arrival of the Soviet power in the beginning of the XX century [11]. Up to the present time more than 30 villages, based in the Obdorsk period, are located in the spatial matrix, they are mainly located along the Ob highway and they are places of permanent residence of the indigenous population (Nenets, Khanty).

The Soviet period. From the first third of the XX century the industrial development began, which was connected with the Soviet modernization, it went slow until the middle of the century, with the use of special settlers, without the creation of large industrial productions. Harvesting remained one of the main activities, at the same time the industrial fishing and processing developed, the collectivization of traditional reindeer husbandry enterprises took place, and agriculture was forming [11]. Rethink of the geostrategic role of the Arctic after the Great Patriotic War predetermined the railway construction and attempts to create seaports as a transit base for the functioning of the Northern Sea Route. The strategy of the development of the Yamal-Nenets Autonomous District in the 20s–60s of the XX century was called integrated development and provided for the development of a wide range of industries and the social sphere, regardless the costs of creation (the Soviet complex period).



Figure 3. The remains of the railway Salekhard — Nadym (501 construction)

As a result of spatial development, 34 settlements were built, the main activity of the permanent population was reindeer husbandry, extraction and processing of fish, agriculture, breeding of fur-bearing animals.

The economic relations had been maintaining in the Yamal region for four centuries (from the middle of the XVI to the middle of the XX century), these relations were generated by the trade and commercial colonization. The conditions for a new period of economic development were formed due to the change in technological methods of production, which created a demand for energy resources, as well as by technical and natural geological capabilities to meet this demand by means of the fields of Yamal.

With the arrival of geologists and the subsequent development of gas and oil fields, the first stage of industrial development of Yamal (the Soviet industrial period) begins. On September 27, 1962 from the Tazovskaya reference well, located near the remains of the ancient city of Mangasea, the first gas fountain hit. Today the promising reserves amount is up to tens trillion cubic meters of gas and more than ten billion tons of liquid hydrocarbons. The gross regional product (GRP) of the Yamal-Nenets Autonomous District in 2015 reached 1.8 trillion rubles, the revenues of the consolidated budget of the Yamal-Nenets Autonomous District are about 140 billion rubles.

During the mass development of oil and gas fields in Western Siberia, first attempts of the scientific substantiation of the methods of integrated development of the Arctic territories were made for the first time [12]. The discussion was centered around traditional and mobile methods. The traditional one provided the construction of settlements within 40–50 km from the fields, the mobile meant the need for expedition-shift work.

As a result, it was found expedient to create different categories of cities: large, medium and small, depending on the specific conditions and the development zone. In total, from 1960 to

1990, 6 cities and 14 settlements were set up, focused on the search, extraction, service and transportation of hydrocarbon raw materials, where currently about 400 thousand people live, 75% of the total population of Yamal (Figures 4, 5). If to consider the population growth in a number of settlements formed in previous periods (Salekhard, Tarko-Sale, etc.), also oriented to servicing the oil and gas complex, the population of the region, depending on the extraction of hydrocarbon raw materials will be 95%.

In the process of gradual expansion of zone of development to the North and increase in the costs of creating cities, it was suggested to focus on the periodic replacement of the newcomers. As a result, in the 80's more than 30% of all works were performed by the mobile method, the number of shift workers reached 130 thousand people.



Figure 4. The Yamal-Nenets Autonomous District in XXI century

Despite the wide scope, the mobile method of development has not been unambiguously assessed in the scientific world: it led to the lack of development of the territory of the North; sociologists gave a negative assessment for this method; medical research has shown that intraregional method is preferable. Over time, the conviction that the mobile method is possible only with sufficient development of the base cities, with creating in them a full-fledged social infrastructure. Therefore, a method of combining the traditional and shift work was proposed as the further method for developing the oil and gas provinces. The settlement system included base and base cities and shift camps.

Market period. The second period of industrial development of resources and territories of the YNAD began in the 1990s and it was associated with a change in the political regime and the emergence of the market economy.



Figure 5. The city of Novy Urengoy

It is generally accepted that the model of regional development, that was formed in the Yamal-Nenets Autonomous District in the 1990s, embodied the most successful example of the social and economic transformation of the mining region in the conditions of transition to the market, allowing for comprehensive regional development on a mature economic and cultural basis [13, Brekhuntzov A., Kulakhmetov N.Kh.]. Indeed, thanks to the creation of the developed fuel and energy complex (FEC) in Yamal during the first period of industrial development, the economic growth in Yamal-Nenets Autonomous District surpassed all other regions of the Russian Arctic (Diagram 1).

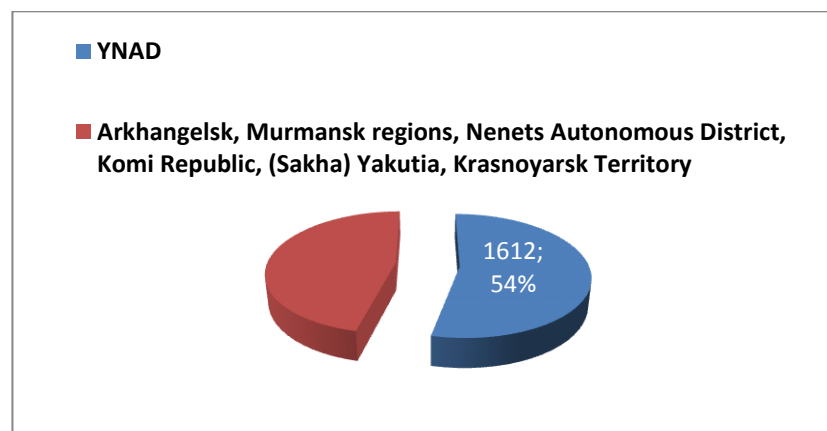


Diagram 1. GRP of the Russian Arctic in 2014 in billion rubles and in %

At the same time, the implementation of the principles of the market economy (equality, openness, freedom of choice, limited state intervention) has got mixed consequences for the economy of Yamal-Nenets Autonomous District and its residents. On the one hand, the efficiency of resource development has improved, the profitability of oil and gas enterprises has grown. The region has received economic independence and its own tax base. On the other hand, the processes of optimization of financial and economic activity of enterprises have begun: the withdrawal and sale of non-core (service) assets; transfer of social infrastructure to the balance of municipalities; reduction of number of workers, the transition to the interregional method of

work. These processes have alienated the economy of the fuel and energy sector from other sectors of the regional economy. External positive effects from the presence of large business in the region have decreased, the differentiation in income distribution has grown, social stratification has increased.

The adjustment policy of regulating the economic activity in the central and peripheral regions has naturally begun to draw the resources to the center, including intellectual and financial, weakening the periphery. With this approach, the only economically viable type of entrepreneurial activity in the Arctic was the extraction of resources and related service functions, but service functions were transferred to companies from other regions in order to maximize profit.

During the market period, the trend to use the mobile method of development was increased, new cities and settlements were no longer built. At the same time, large shift camps were created: Sabetta, Bovanenkovo, Kharasavey, Yamburg. The statistics does not separately consider those working in shifts, but according to some estimates, their number in Yamal varies from 70 to 100 thousand people in different seasons.

The consequences of the transition to the market regulation of economic processes in the Arctic regions, as well as the current achievements in scientific and technological progress, the factors of globalization, the decline in production in old fields have significantly influenced on public relations in the region. Therefore, despite the strong economic position of the Yamal-Nenets Autonomous District in relation to other Arctic territories, the social and economic model used in the region has ceased to meet the demands of the society and provoked a massive outflow of the population (Diagram 2).

The main factors that reduce the effectiveness of the market model, reduce real incomes of the population, quality and attractiveness of life in the region:

- in the Yamal-Nenets Autonomous District, the fourth technological structure remains dominant, it is focused on the extraction and transportation of hydrocarbon raw materials. New high-tech activities are not developing; traditional activities are unprofitable;
- conjuncture, technological and climatic risks [14, Detter G.F., Kozlov A.V., Malyshev E.A.], degradation of infrastructure facilities;
- gradual exclusion of local business and population from the financial flows of the oil and gas complex, a shift in favor of using interregional method of work;
- stabilization of budget revenues, insufficiency of budget investments in human development and conservation of ecosystems.



Diagram 2. The impact of economic policy on the population of Yamal-Nenets Autonomous District. While gross regional product becomes bigger, population diminishes, and real incomes of populations become smaller.

The conducted historical analysis of social and economic development of Yamal-Nenets Autonomous District for the past four centuries has revealed five-time periods for the development of Yamal, differing in goal-setting, spatial development, technological methods of production and social and economic productivity of development, namely, the Mangazeya, the Obdor, the Soviet complex and Soviet industrial; market periods. The spatial structure actively developed in three periods: during the Obdor and both Soviet periods, it was related to the goal of development aimed at the arrangement and sustainable development of the Arctic territories. The modern spatial structure of the Yamal-Nenets Autonomous District was formed mainly during the Soviet periods. The state and business got the largest volumes of production and incomes during the Mangazeya and the market periods, which, however, led to the degradation of the spatial structure and the decrease in the population in the territory. The emergence of new technological methods of production was the main factor in the changing lifestyles of the population of the region and the industrialization of the economy.

Settlements formed during the Obdor and the Soviet complex periods, due to their belonging to the 2nd and 3rd technological modes, are currently most vulnerable to degradation, primarily to intellectual. The income from traditional nature management is not sufficient to ensure the livelihoods of the population, so the preservation of settlements and the way of life is due to subsidies from the regional budget as a result of the support for the traditional economy on non-market fundamentals that were formed in previous economic periods. Maintaining of the traditional institutions does not provide an opportunity for the development of new industries. The physical infrastructure of the settlements is supported by the regional budget, but it does not

meet modern requirements for comfortable living, with the possible exception of settlements that have received the status of an administrative center.

Crisis events in the economy, which began in 2008, revealed the problems of social and economic development of cities and settlements of Yamal, formed during the Soviet industrial development, including: a mono-profile economic structure; changes in the social policy of city-forming enterprises (development of interregional watch); end of the period of active development and technological modernization of production, leading to the release of workers; lack of strategic vision of the parameters of future development in institutions of power. Certainly, it is important to solve the issues of economic specialization of the single-industry towns of Yamal, search for new sources to ensure their livelihoods [15, Larchenko L.V., Kolesnikov R.A.] for the elimination of the Mangazeya scenario.

The history of the settlement of the Yamal-Nenets Autonomous District as a territory for temporary residence created an interlayer of the mobile population that does not link its future with the region, thus creating informal restrictions for sustainable development. The natural process of formation of the settlement structure, which has an economic base and is developing on the basis of market relations and rational nature management, was interrupted at the beginning of the 20th century and was entrenched by subsequent political and economic events which created a rigid colonial structure in which the resources of the region serve the public idea, the state or private treasury, the interests of the population and entrepreneurship are of secondary importance.

Considering the historical and economic analysis of the various periods of development of YaNAO:

- the regularity of the results of the development of the Arctic territories from the goal-setting of the state is revealed. If the main purpose of development is to fill the state treasury and maximize the profits of transnational companies, the result will be ecosystem degradation, social stratification and elimination. If the goal-setting is based on the inclusion of regions in the economic mechanism as equal elements of the state, accompanied by the development of human capital, sustainable development of the territories should be expected;
- the relevance and practical significance of the formation of a new paradigm for the spatial and urban development of the Arctic regions, based on modern achievements in science and technology, including the solution of the issues of locating productive forces and resettlement, considering the foundations of the life of the permanent population and the ecological capacity of landscapes, is confirmed.

Strategic models of development

In the last decade, the study of the specific features of the spatial development of the Arctic regions was associated with mass development and approval of strategies for social and economic development of regions and settlements, territorial planning schemes, as well as with crisis trends in the economy of individual regions. In the YaNAO the studies were also carried out aimed at determining the trajectories of social and economic development, in connection with the comprehensive development of the Yamal peninsula by enterprises of the fuel and energy complex [13].

Strategies for the development of coastal municipal areas have enshrined their mission, the short nature of which is to ensure the development of natural resources (Table 2). Thus, the new strategic planning documents remain dependent on the trajectory of the previous development, which is the subordination of the interests of the region to the interests of the center.

Table 2

Strategies for the social and economic development of the coastal regions of the YaNAO

Indicator	Nadym district	Yamal district	Tazovsky district
The title of the document	Strategy of social and economic development of the Nadym district until 2020	Strategy of social and economic development of the municipal entity Yamal district for the period until 2020	Strategy of social and economic development of the municipality Tazovsky district until 2025
Strategic mission	The development of oil and gas production complex, based on the effective use of the resource potential, advanced development of the transport and energy infrastructure	Yamal district is a territory of harmonious combination of development of industrial and traditional ways, where comfortable living conditions for all population are provided	Tazovsky district is the territory of active development, the area of effective nature management, promising base of the gas producing industry of Yamal.
Main strategic objective	Raising the level and quality of life of the population based on the effective use of the aggregate potential of the Nadym region	Raising the level of well-being and quality of life of the population on the basis of a harmonious combination and effective development of the traditional and industrial structures of the regional economy	Ensuring a high level and quality of life of the population of the Tazovsky district on the basis of effective development of natural resources

The main objective of these strategies is to ensure a high level and quality of life of the population on the basis of effective development of natural resources. Accordingly, the implementation of social and economic policy is tied to the volume of extraction and export of natural resources, revenues from the sale of which are planned to be used to increase the level of infrastructure development, to create a comfortable living environment for the population.

Bearing in mind the constraints associated with the conjuncture in world hydrocarbon markets, it is already clear that only partial implementation of these strategies is possible. In

addition, the time period for achieving the goals or adjusting them is increasing, while the region's ecology continues to suffer from particular damage, which cannot be completely compensated by declining budget revenues.

It is interesting that all development strategies of the Yamal-Nenets Autonomous District and its municipalities envisaged the increase in the population. So, by 2020 the population of Yamal should be 600 thousand people³. It is clear that this will not happen. It is also obvious that the methods of forecasting which were used previously are unsuitable. The weak side of these strategies is that they do not consider the development opportunities associated with the formation of new technological structures, the implementation of the concept of the innovative social-oriented economy, do not use local human capital in development mechanisms, and do not envisage measures to improve its level and quality.

The formation of an innovative socially oriented economy is envisaged by the Concept of long-term social and economic development of the Russian Federation for the period till 2020 (the Concept)⁴. The concept selectively approaches the innovative development of Russian regions, as follows: the development of scientific, technical and educational potential is envisaged only in large urban agglomerations with high quality of habitat and human potential, dynamic innovative and educational infrastructure; the formation of clusters is planned in urbanized regions, in poorly developed territories, clusters are oriented to deep processing of raw materials and energy production using modern technologies; zones of advanced economic growth are planned to be developed in the largest agglomerations and large cities — the centers of the regions with the most dynamic economic growth, the high level of human capital development and the potential for the development of the innovation economy, which provides an inflow of population and investments that concentrate service functions and industrial productions. The concept does not foresee the development of any innovative formations, zones or systems in order to enhance the development of the Russian Arctic sector, although there are problems of development of oil and gas fields, low exploration of the Arctic continental shelf, the need to adapt infrastructure to the projected climate change, the development of information and communication technologies and means of communication.

Thus, the policy of innovative socially-oriented type of development in the Concept is shifted in favor of large cities and agglomerations located in the middle and low latitudes of the

³ the Concept of long-term social and economic development of the Russian Federation for the period till 2020, is approved by the Resolution of the Legislative Assembly of the Yamal-Nenets Autonomous District dated December 14, 2011 N 839.

⁴ On the Concept of long-term social and economic development of the Russian Federation for the Period till 2020, Order of the Government of the RF, dated November 17, 2008 N 1662-p.

country, on the basis of which the scientific, educational, innovative and industrial centers will be formed. In the northern regions, raw material specialization is fixed with individual elements of raw material processing.

The proposed sectoral and functional division of the territories does not create favorable conditions for the development of the Arctic regions. The consequences of such a division are the outflow of qualified personnel, the reduction of intellectual and human capital — the basic capital of the innovation economy, the increase in economic, technological and social dependence of the regions, which contradicts the principle of balanced spatial development claimed by the Concept. And in fact, it is a continuation of the colonial policy of developing the Arctic, does not correspond to the principle of sustainable development, in which the exploitation of natural resources considers the interests of the current and future potential and generations.

The most important strategic planning document in the Arctic is the Arctic Strategy², which, describing the risks and threats to the current social and economic state of the Arctic, notes "a shortage of technical means and technological capabilities for exploring, developing and using Arctic spaces and resources," as well as a lack of willingness to move to the innovative way of development of the Russian Arctic, that is why, among the priority directions of the development of the Russian Arctic is the development of science and technology.

At the second stage of the implementation of the Arctic Strategy starting from 2015, the transition of the Russian Arctic to a sustainable, innovative social and economic development is envisaged. Thus, the Arctic Strategy, indicating the problems of the social and economic development of the Russian Arctic, points to the need to choose the innovative way of development, the search and introduction of new technologies, and provides the responsibility of the authorities for achieving the established indicators. These provisions are justified, proceeding from the fact that the application of standard approaches and technologies in specific Arctic conditions will be ineffective and even impossible. At the same time, it should be noted that the implementation of the Arctic Strategy in terms of innovative development of the regions is delayed: there are no documents on innovative development of the Russian Arctic, indicators are not established.

With this in mind, we can conclude that the state innovation policy of the Russian Federation, fixed in the documents of strategic planning, does not have a clearly expressed concept of regional development, which is confirmed in other studies [16]. On the one hand, the need for an innovative socially-oriented way of development of the country and regions is declared, on the other, reservations are made in favor of developed regions, the plans are not

being fulfilled. In modern conditions, this leads to the increase in the attraction of developed economic centers and weakens remote regions, delaying the most creative specialists and investment resources. Considering the demographic and migration processes in the Russian Arctic, caused by economic and environmental factors leading to decrease in the number of the permanent population and the replacement of temporary and often low-skilled personnel from southern regions and countries, the Russian Arctic is de-intellectualizing, the technological gap is growing, and the level of cultural identity of the population is deteriorating.

The absence of clear state policy for the territorial development of the Arctic regions reduces their economic potential, does not contribute to sustainable development and efficient use of natural resources in the vast territories of the Russian Arctic, does not contribute to the emergence of the innovative, socially-oriented economy. Continuation of trends towards an outflow and a qualitative replacement of the population in the Russian Arctic, the decrease in the intellectual potential of the region, which will not allow the full realization of the tasks of social and economic development and development of the Arctic riches, lowers competitiveness in the struggle for resources and territories.

It can be confidently predicted that failure to take measures aimed at the sustainable development of Yamal leads to the repetition of the Mangazeya scenario and will, over time, involve the depletion of gas and oil reserves, with irreparable damage to nature.

Conclusion

The study of historical and operational models for the development of the Yamal-Nenets Autonomous District has shown their specific features, advantages and disadvantages, revealed the pattern of development of the Arctic territories depending on the purposes of their development, confirmed the hypothesis set for the purpose of the study, namely, the need to search for new basic principles and provisions for the formation of a modern model of social and economic Development of the Arctic region, capable of counteracting emerging challenges and threats. As a result of the research the following provisions are formulated:

1. It is necessary to change the approaches to the formulation of strategic goals for the social and economic development of the Arctic regions, which must consider not only the desired result of functioning — the quantity of products and the standard of living, but the factors necessary to achieve these goals, i.e. the ability of the region to develop independently, to support innovation, to meet the challenges of the time.

The goal of the region's development in modern conditions should be the desire to accumulate human capital, maintain and develop intellectual and technological capabilities, the

ability to create and introduce new technologies that increase the sustainability of development and create higher opportunities to meet the needs of the population. Thus, the high level and quality of life of the population should not be the end purpose, but a consequence of the innovative development of society in complex and dynamic conditions.

2. The economic policy of the Arctic regions should be established in the invariance of the innovative way for the formation of the trajectory of sustainable social and economic development. Distances and climate make most economic activities in the Arctic economically impractical, therefore only knowledge, technology and new equipment can open up the Arctic expanses, create conditions for economic development, safe and comfortable living.

3. The strategy for implementing of sustainable development policies should become proactive, i.e. not to be limited to solving current issues and problems, but to strive forward, to focus on future challenges and opportunities, which will require extensive involvement of scientific organizations, the development of new social humanitarian technologies for forecasting and management.

4. Creation of the adequate system for the management of the Arctic territories, which provides for measures of state regulation (regulatory, tariff, tax, etc.) of economic activity in the Arctic territories, and mechanisms for increasing the effectiveness of institutions of power.

5. The maximum inclusion of the potential of the local population and business in the production and technological and financial-commodity chains of large enterprises and the Arctic megaprojects, which will allow more fully use the opportunities for industrial and infrastructure development of the Arctic in the interests of the region, will expand the economic basis of development.

6. Reorientation of commodity flows from the meridian (east to west) to latitudinal (north-south), the formation of the intra-Siberian territorial industrial complex, including within the framework of the project concept Ural Polar — Ural Industrial.

In the future it is proposed to expand the basic principles that form the sustainable development of the Arctic regions and their meaningful disclosure.

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The current social and economic condition of the cities of the Yamal-Nenets Autonomous District and their innovative development¹



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Abstract. The main problems of the socio-economic situation of the cities of the Yamal-Nenets Autonomous District, which are primarily connected with the narrow raw material specialization of their economy, are considered in the article. The search for innovative ways of development of cities being resource centers of the Arctic zone of the Russian Federation was carried out. The authors substantiate the need to move from the old concepts of industrial development to neoindustrialization. The methodological basis for achieving the goals set in the article are the system approach and statistical methods of analysis.

Keywords: *The Arctic zone of the Russian Federation, livelihoods of the population, social and economic development, innovative development, sustainable development, neoindustrialization, spatial structure, coastal area*

The northern territories play an important role in the development of Russia. One of the key Arctic regions that make a significant contribution to the economic and energy security of the country is the Yamalo-Nenets Autonomous District (YNAD), which specializes in the extraction of fuel and energy resources.

The framework of the modern economy of YNAD has become its cities, in which 84% of the population lives. Most of the cities of the Yamal-Nenets Autonomous District were formed in the second half of the 20th century as resource centers for oil and gas production, therefore, their industrial structure is significantly different from the all-Russian structure by higher share of industries associated with the extraction of minerals, and a very low proportion of manufacturing enterprises, as well as enterprises focused on satisfying consumer demand.

The existing economic specialization of cities makes them dependent on fluctuations in world prices for hydrocarbon raw materials, on the intensification of oil and gas reserves, and on the import of necessary goods and services from other regions. In such circumstances, narrow

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specialization and the absence of economic diversification cause the instability of the cities of Yamal to crisis social and economic phenomena.

In the future, the economy of cities will be greatly influenced by the implementation of energy efficiency projects and projects for creating alternative energy sources. Already today in the autonomous district there is a decline in oil production due to the depletion of reserves [1, Larchenko L.V., Kolesnikov R.A., pp. 529–536] and the decline in gas production due to reduced demand from domestic and foreign consumers, as well as a reduction in supplies to power plants and boiler plants due to the introduction of nuclear power units and modern combined-cycle plants [2, Larchenko L.V., Kolesnikov R.A., pp. 72–78].

The economic crisis of recent years, which led to a worsening of the social and economic situation in mono-functional cities, sparked the outbreak of research aimed at finding ways to diversify and restructure the economy of such cities. However, in most cases, the authors of such studies discuss the issues of economic modernization closely with the search for new industries specializing in the industrial economic structure that could compensate for the current losses from the decline in activity in the main industry, without focusing on the fact that in the short term, in a rapidly changing market, data Industries can also become economically unprofitable [3, Larchenko L.V., Kolesnikov R.A., pp. 79–84; 4, Pytkin A.N., Zagoruiko I.Yu., pp. 132–137; 5, Khavina L.A., pp. 117–124]. In turn, many developers of social and economic development strategies of municipalities associate diversification and restructuring of the economy with the expansion of engineering infrastructure and the emergence of new social facilities [6, Zamyatin N.Yu., Pilyasov A.N., pp. 216].

In this regard, the research is gaining relevance, aimed at solving innovative search for ways of social and economic development of cities, creating an innovative environment conducive to constantly progressing innovative development.

The socio-economic situation of the cities of YNAD in the context of the economic crisis

There are eight cities located on the territory of the Yamal-Nenets Autonomous District, six of which are resource centers (Noyabrsk, Novy Urengoy, Nadym, Muravlenko, Gubkinsky, Tarko-Sale), Labytnangi was formed as a transshipment base for import of equipment, building materials, etc., Salekhard — the district capital, performs mainly administrative and management functions. In terms of population, six of the eight cities belong to small towns, two cities (Novy Urengoy and Noyabrsk) to large cities (Figure 1).

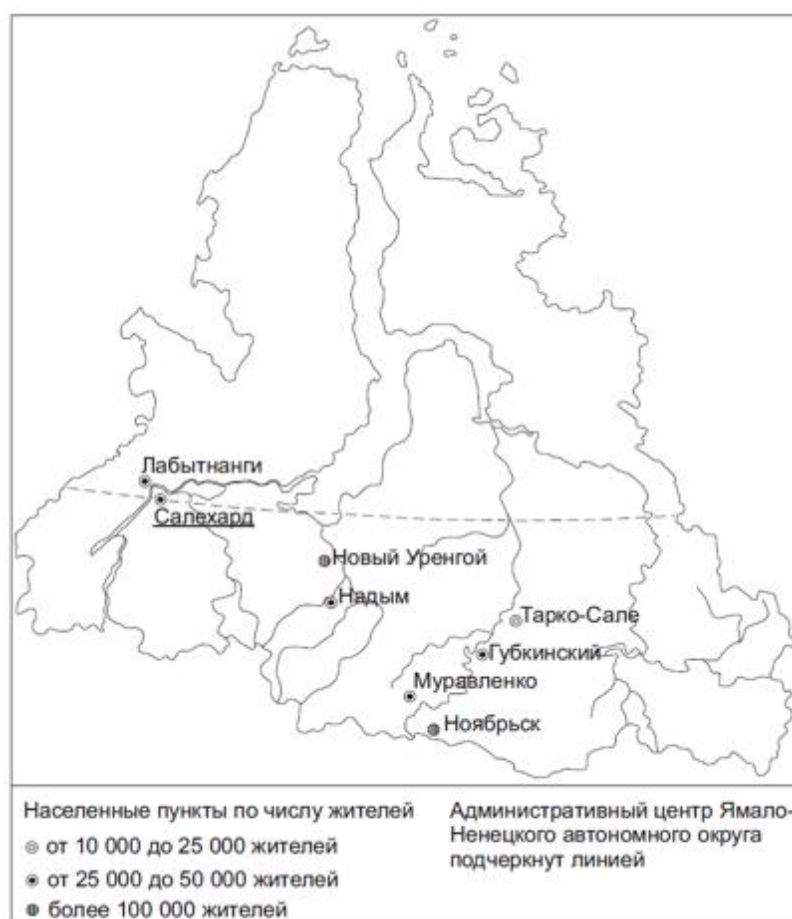


Figure 1. Map-scheme of the network of cities of the Yamal-Nenets Autonomous District and their differentiation according to the number of inhabitants. Grey: 10,000-25,000 inhabitants, grey with a dot – 25,000 to 50,000, and only 2 have more than 100,000 inhabitants (Novy Urengoy, Noyabrsk)

Features of the socio-economic development of the cities are related to the fact that in the Yamal-Nenets Autonomous District large vertically integrated companies are engaged in intensive extraction of hydrocarbon raw materials. On the one hand, this has determined some welfare of the socio-economic situation. For example, in the cities of Yamal-Nenets Autonomous District, the highest average incomes in Russia, which are 1.5–2 times higher than average expenditures (Figure 2). In addition, oil and gas companies often finance socially significant projects.

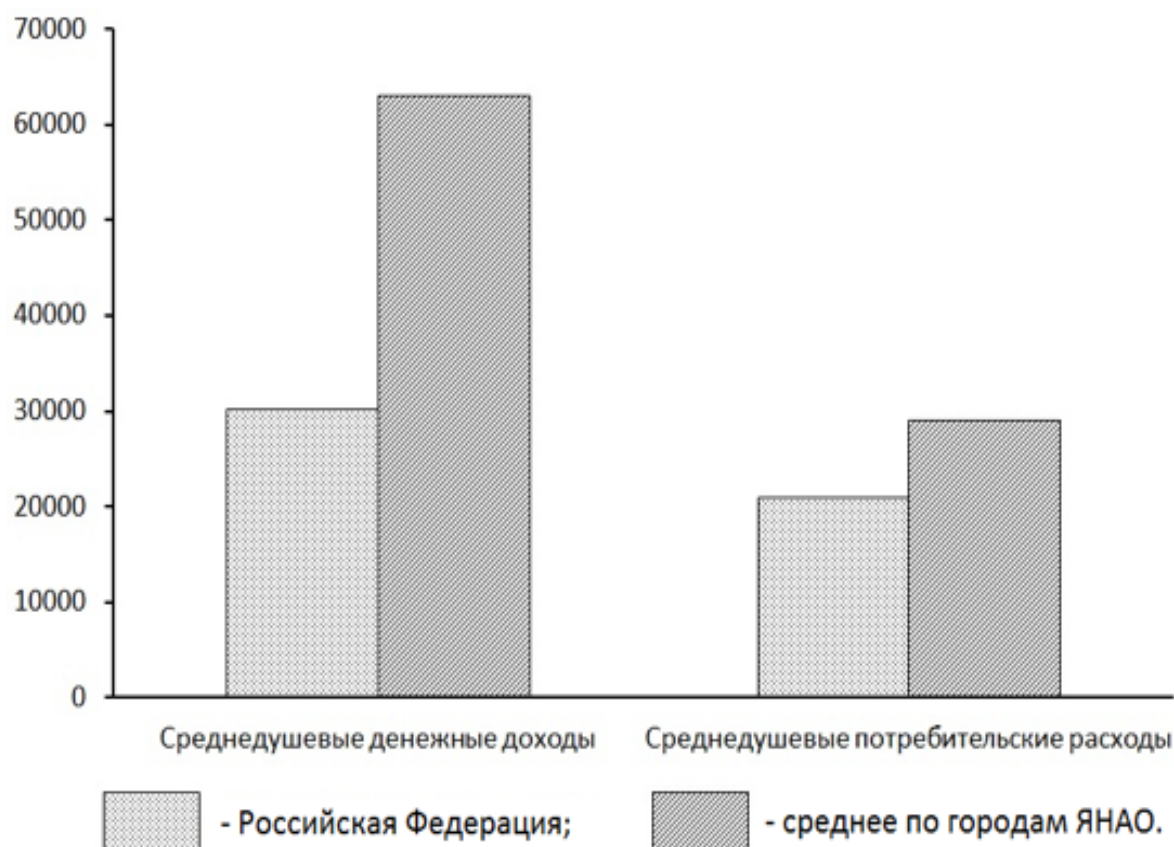


Figure 2. Average per capita monetary income and consumer spending of the population in cities of YNAD and the Russian Federation, 2015.

Average per capita monetary income (two columns in the left) and average per capita consumer spending (two columns in the right) are compared for the Russian Federation and the average per cities of YNAD. Both are bigger in YNAD.

On the other hand, a highly specialized monofunctional structure of the economy has been formed, based on the extraction of hydrocarbon raw materials, there are no other fully operating areas of specialization, there is practically no manufacturing industry, no science-intensive production, small business is ill-developed, etc.

The majority of the able-bodied population works in oil and gas producing enterprises or in organizations associated with them, as well as in the budgetary sphere. However, in those cities that are not resource centers (Salekhard, Labytnangi) or belong to resource-producing cities, but around which hydrocarbon reserves are depleted (Noyabrsk, Muravlenko), the majority of the population is employed in the budgetary sphere.

Table 1

*Average number of employees of organizations and enterprises
in cities of YNAD in 2015*

	Salekhard	Labytnangi	Novy Urengoy	Nadym	Noyabrsk	Muravlenko	Gubkinsky	Tarko-Sale
	% of the total number of employees of all organizations							
Agriculture and forestry, hunting	0.5	0	0	1	1	0	0	1
Mining	0.5	0	23	15	18	15	30	46
Manufacturing	2	1	1	3	5	4	6	5
Production and distribution of electricity, gas and water	6	11	5	6	8	9	7	4
Construction	3	4	17	12	4	3	5	11
Wholesale and retail trade; repairs	2	3	3	2	3	0.8	1.8	0.5
Hotels and restaurants	2	2	2	1	1	0.2	0.2	2
Transport and communication	15	25	16	27	16	9	5	8
Financial activities	3	1	2	1	2	1	2	0.5
Operations with the real estate, rent	10	4	11	13	6	11	10	8
Budgetary sphere	46	44	17	17	30	42	26	12
Municipal and social services	10	5	3	3	6	5	7	2

During periods of economic growth of the world economy, the mono-functionality of the region's cities that produce oil and gas, does not raise fears, but in the context of financial crises, during periods of lower prices for hydrocarbon raw materials, the social and economic situation of these cities is deteriorating sharply. It is significant that at this time, the own revenues of the budgets of cities fall: in 2009 by 15–19%, in 2014–2015 by 10–18% (Table 2).

Table 2

Own incomes from the total revenue of the local budget

City	2008	2009	2010	2011	2012	2013	2014	2015
	Billion rubles							
Salekhard	4.33	3.66	4.61	4.70	3.91	4.13	3.72	3.64
Gubkinsky	1.87	1.54	2.21	2.76	2.38	2.18	2.03	1.92
Labytnangi	3.74	3.16	3.69	4.40	3.06	2.93	2.55	2.42
Muravlenko	2.45	1.98	2.45	3.19	2.42	2.87	2.50	2.41
Novy Urengoy	9.48	7.98	9.25	9.74	7.13	6.74	5.76	5.62
Noyabrsk	6.32	5.19	6.44	9.37	6.87	6.76	5.79	5.51

The level of industrial production in crisis periods in resource centers also falls. For example, in the cities of Novy Urengoy and Noyabrsk in 2009–2010, it declined by 40–50% and has not been recovered until now. At the same time, in those cities that are not connected with the

extraction of minerals (Labytnangi, Salekhard), there is no decline in the level of industrial production.

The high degree of depreciation of fixed assets significantly aggravates the social and economic situation of cities. First of all, this negatively affects the cost of production due to additional costs, which reduces the competitiveness of the produced goods. It is interesting that, despite the relatively high investment in fixed assets, the depreciation of fixed assets continues to grow.

The low innovative activity in the cities of the Yamal-Nenets Autonomous District call attention to itself. If in Russia as a whole it is 9.9%, here is only 7.8%. There are no developments of advanced production technologies. Weak innovation potential also reduces the competitiveness of cities [7, Detter G.F., pp. 69–80].

The negative aspect of the socio-economic situation is that starting from 2009, despite the annual growth of wages, the real monetary incomes of the population are declining. This is due to a high level of inflation, a decrease in income from entrepreneurial activities.

One of the indicators of the social and economic well-being of cities are migration processes. Since 2009, in most cities of the Autonomous District there is a migration loss of population. The exception is the cities of Salekhard and Gubkinsky (Figure 3).

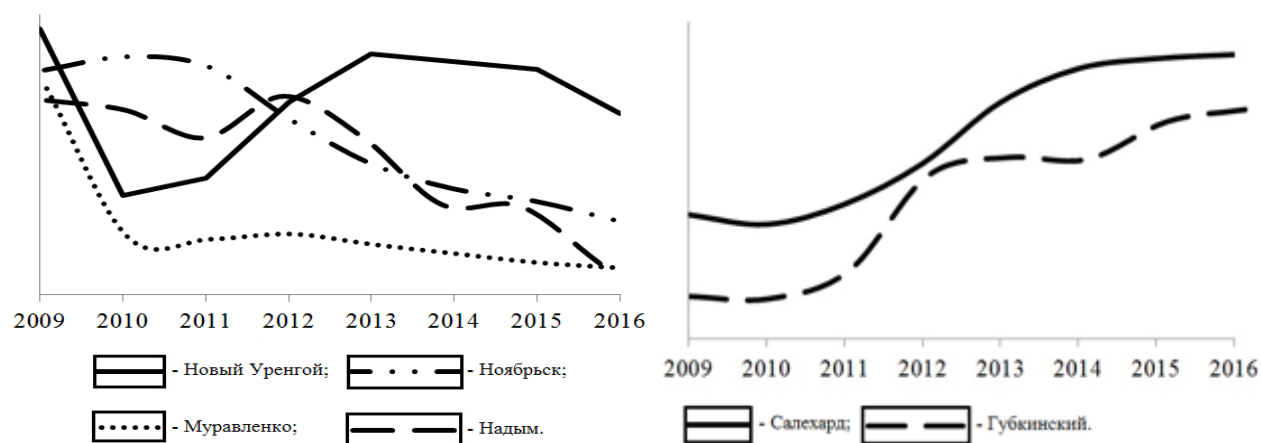


Figure 3. Population dynamics in the cities of Yamal-Nenets Autonomous District. Population grows in Salekhard and Gubkinsky only (in the right).

The main reasons for the outflow of population are following. First, in connection with the depletion of hydrocarbon resource base, oil and gas extraction from the old resource areas to new ones is being redeveloped, which are being developed on a rotational basis with the attraction of cheap labor from other regions. Secondly, there is a decrease in the real money income of the population of northern cities. Thirdly, the lack of higher educational institutions leads to the fact that almost all young people leave the city after graduation for the purpose of obtaining higher education and do not come back.

Thus, in terms of the totality of indicators, the socio-economic status of the cities of the Yamal-Nenets Autonomous District cannot be fully considered acceptable. In many ways, this situation is due to the existing budget system, which abolishes the financial independence of municipalities. Over the past decade, centralization of the budgetary system in favor of the federal budget to the detriment of local and regional budgets has occurred in Russia. Currently, federal taxes account for about 80% of consolidated budget revenues. As a result, the taxes of enterprises that receive huge profits from their activities in the Arctic zone do not go to the development of northern cities, but to the development of other regions. Local taxes do not cover even 10% of the expenditure powers of local self-government bodies. This situation has led to a slowing of the infrastructure, demographic and economic development of the northern territories.

Opportunities for the economic diversification

The main drawback of the existing social and economic situation of the cities of Yamal-Nenets Autonomous District is that during the prosperous state of hydrocarbon markets, no new production facilities were created in populated areas. The absence of manufacturing enterprises, as well as enterprises focused on satisfying consumer demand, led to the dependence of populated areas on the import of necessary goods from other regions of Russia and the countries of the world.

The main drawback of the existing social and economic situation of the cities of Yamal-Nenets Autonomous District is that during the prosperous state of hydrocarbon markets, no new production facilities were created in populated areas. The absence of manufacturing enterprises, as well as enterprises focused on satisfying consumer demand, has led to the dependence of populated areas on the import of necessary goods from other regions of Russia and the countries of the world.

The economy of cities is not developed, as mechanisms are being implemented, in which the funds earned on the extraction of minerals are immediately spent on the purchase of goods necessary to maintain the existence. Today, this seriously complicates the diversification of the economy and sharply reduces the ability of the cities of Yamal to resist the existing crisis phenomena in the economy.

Currently, the authorities of the municipalities of the Autonomous District are developing strategies for socio-economic development, in which they try to move away from narrow-specialization to a multi-sectoral economy by expanding the economic base and the sectoral structure of the economy. The analysis of these strategies shows that they basically mean the extension of engineering infrastructure, the construction of oil and gas chemical companies, the

organization of service companies, that is, they relate the modernization of the economy to the development of specialization industries of the old industrial economic structure, primarily to compensate for current losses from declining activity in the oil and gas industry without considering economic feasibility. In addition, in terms of rapidly changing market, industrial branches become economically unprofitable after a certain period of time and exacerbate the situation of resource-producing cities. Therefore, a new model of development of the cities of the Yamal-Nenets Autonomous District is required, which would be based not so much on the extraction of fuel and energy resources and new specialization areas within the available resource base, but on knowledge, human resources and networks.

In other words, neo-industrialization is required, educational infrastructure must be created at the first stage of it, on the basis of this infrastructure, a research infrastructure and a regional innovation system are formed. The next stage of neoindustrialization is support of innovative activity of small and medium-sized businesses, the formation of a technology transfer system and the reorientation to prospective production, as well as the growth of the services sector.

However, the transition to neoindustrialization should be based on the use of the potential of old industry and with large-scale government support, a high degree of administrative regulation and state financing, which should decrease consecutively.

Conclusion

The main features of the social and economic situation of the cities of the Yamal-Nenets Autonomous District are determined by the fact that their development directly depends on the extractive oil and gas industry, whose influence is manifested through fluctuations in world prices for hydrocarbons, the degree of depletion of oil and gas reserves, the level of demand for hydrocarbon raw materials from domestic and foreign consumers.

The narrow specialization and the lack of economic diversification have caused instability of cities to crisis phenomena and outflow of the population. Therefore, for sustainable development it is necessary to develop a model in which the result of economic diversification and restructuring would not be the emergence of new specialization industries for short-term alignment and the compensation of current losses from declining activities in oil and gas production, but the transition to a new economic order that allows them to adapt to a rapidly changing market. The basis of such a way should be knowledge, human resources, the technology transfer system, small and medium-sized businesses.

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Content analysis as a method to study the features of life of the resident population of coastal settlements of the Yamal-Nenets Autonomous District¹



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Abstract. The authors discuss the methodological approaches to the assessment of the level and quality of life of the population. The analysis of the scientific literature shows that in most cases, such studies are based on the basic statistics. The results of such studies give rise to some controversy related to the fact that at a fairly high standard of living, determined by a statistical method, the actual level of satisfaction of the population in the region, determined by other methods, is estimated lower. In this regard, the authors offer alongside with generally accepted methods of living standards and quality assessment of the population, to use the method of content analysis, which can be also used to identify the real problems of life of the resident population of coastal areas in terms of industrial development of the Arctic region.

Keywords: *content analysis, livelihoods of the population, the Arctic zone of the Russian Federation, standard of living, quality of life*

The study of the problems of life activity of the resident population living in the Arctic zone of the Russian Federation (hereinafter — the Russian Arctic) is especially urgent. This is mainly related to the implementation of the state policy in the field of social and economic development of the Russian Arctic reflected in a number of strategic documents² which set goals for the progressive development of the social, economic, cultural, political and environmental spheres of the life of the permanent population, including Indigenous small-numbered peoples of the North (hereinafter — the indigenous people). This means that the strategic goal of state and municipal management is to create conditions for raising the level and quality of life of the population. Their quantitative and qualitative indicators make it possible to assess the effectiveness of the activities

¹ The research is carried out within the framework of the project of the RHSF №16-02-00741 "Life activity of the permanent population in the coastal zones of the Arctic in the current conditions of industrial development of the macroregion"

² "Fundamentals of the State Policy of the Russian Federation in the Arctic for the Period until 2020 and Further Prospects" — 2008; "Strategy for the development of the Arctic zone of the Russian Federation and ensuring national security for the period until 2020" (2013); "Action plan for the implementation of the Strategy for the Development of the Arctic Zone of the Russian Federation and National Security for the Period to 2020" (2013); The State Program "Social and Economic Development of the Arctic Zone of the Russian Federation" (2014).

of the relevant authorities [1, Glebova I.S., Khabribrakhmanova R.R., pp. 167–170] and are the important analytical tool for socio-economic, sociocultural policy in the region, which makes it possible to determine a further model for the development of the territory.

Assessment of the level and quality of life of the population as the object of research

The study of the problems of the life activity of the population is inseparably linked with the concepts of "standard of living" and "quality of life", which in turn are of the same type, but not identical [2, Magomayev M.M., Magomedova E.R., p. 11]. The term "standard of living" is connected with the concepts of production, consumption, cost of living, etc., in this connection the term is often considered in the economic system "resources — consumption". In other words, the "standard of living" is the provision of the population with the necessary material goods and services, the reached level of their consumption and the degree of satisfaction of reasonable needs [3, Titkova L.S.]. Whereas in the structure of the definition of "quality of life" the emphasis is not only on obtaining a material component, but also includes subjective and objective factors that characterize the social, cultural and spiritual aspects of life of the population [2, Magomayev M.M., Magomedova E.R., p. 11]. Hence it follows that the "quality of life" is a broad and multifaceted concept that determines and captures practically all sectors of human life. Meanwhile, the "standard of living" characterizes the quantitative aspect of the quality of life and is limited only by the satisfaction of people's needs. Thus, when assessing the level and quality of life, it is necessary to consider their components in symbiosis, since the criteria for assessing the quality of life is manifested through indicators of the standard of living.

Therefore, assessing the level and quality of life is a multifaceted and time-consuming process that requires the use of various methods. The analysis of domestic scientific literature indicates that the study of the quality of life of the population is carried out by various methods. For example, in the scientific work on assessing the quality of life of the population in Russian regions, researchers Grishin I.V., Polynev A.O., Timonin S.A. have developed the methodology that is based on the calculation of the composite index of each individual component (statistical indicators of the income level of the population, the level of development of the consumer market, the provision of housing and housing conditions, the state of the labor market, the level of development of health care, education, infrastructure, etc.) in a region [4].

Mosyakina E.A. [5] and the authors Bondarenko P.V., Fokin E.A., Trukhlyaeva A.A. [6] in their works used the methodology of estimating the integral indicator of the quality of life of the population, based on the use of the odd-number rule (the pairwise comparison method) of

Fishbern. The peculiarity of this method is the use of a mathematical apparatus for estimating the integral indicator of the quality of life of the population.

Ayvazyan S.A. proposed the methodology for assessing the primary official data of state statistics bodies, concerning the quality of life of a region. The methodological approach of this assessment is based on special types of convolutions of particular indicators and on methods for multicriteria ranking of objects [7].

Polyakova A.G. assessed the quality of the socio-economic space of a number of cities in the Tyumen region through a social survey of the local population, where it is proposed to calculate the complex indicator of a number of private indicators (income level, career prospects, access to medical services, crime rates, environmental indicators, totally 13 indicators) [8].

Thus, we see that in most cases, many researchers propose a methodology based solely on the calculation of primary statistics. Quantitative assessments of the criteria for the level and quality of life of the population are based on scientific principles, needs and interests of the individual. At the same time, as the scientists note, "the quality of life of the population" is a complex phenomenon that goes beyond the traditional notion of material well-being and includes difficult quantifiable cultural, psychological and philosophical components. In this case, the qualitative evaluation of a certain criterion is not fixed by a statistical value, but exists in the minds of people, in their personal opinions and assessments.

As Glebova I.S. and Khabribrakhmanova R.R. noted in their article "such situations can occur, when with a sufficiently high level of quality of statistical indicators of the quality of life, the satisfaction of residents with living conditions in a particular territory and life in general can be assessed low. It means that the main goal of the development of the territory, raising the level and quality of life is not achieved, respectively, there are problems in the functioning of the socio-economic system of the territory "[1, Glebova I.S., Khabribrakhmanova R.R., p. 167].

Therefore, in order to assess the level and quality of life, it is necessary to carry out both quantitative and qualitative analysis based on the population's opinion on the degree of satisfaction with different aspects of life. Satisfaction with the quality of life of the population, according to some scientists, can be reflected in the information environment of a particular region, which, in turn, is formed by local media (hereinafter mass media). The description by local media of different views and opinions on the state and development of the region, allows us to identify the problem points of the socio-economic and socio-cultural system of the region. In addition, information in regional and municipal publications is more in line with the interests of

local residents, especially in national subjects [9, Molodov O.B., p. 127], in turn, local mass media form their own opinion and attitude to a particular problem among the residents.

Content analysis as a method of studying the level and quality of life of the YNAD

In this regard, along with the generally accepted methods of assessing the level and quality of life of the population, in our opinion, it is necessary to conduct in parallel the studies of municipal and regional mass media (hereinafter mass media) on the basis of content analysis in order to identify the real needs and problems of the resident population. Content analysis is a special methodical procedure for analyzing the core of communication, what lies between the communicator and the audience, between the author of the message and those to whom this message is addressed [10, Semenov A.V., Korsunskaya M.V.]. In other words, the content analysis allows the researcher to make a conclusion about various socio-economic, sociocultural phenomena using a large textual array, highlighting information aspects that are not lying on the surface.

The purpose of this article is to describe the algorithm for conducting a study of municipal media using the "content-analysis" method in order to assess the identification of the problems of vital activity of resident population living in the coastal territories of the Yamal-Nenets Autonomous District under the conditions of industrial development.

Brief characteristics of the research object

The Yamal-Nenets Autonomous District has become one of the most dynamically developing regions of the Far North of the Russian Federation, which possesses the necessary natural and resource potential for independent and self-sufficient development in the Arctic. The main economic activities of the region are: industry, construction, trade, transport and communications, agriculture and forestry. The most successful sphere of the economy of the Yamal-Nenets Autonomous District is the industry, which accounts for about 600 billion rubles.

The industry is represented by the extraction of minerals, processing industry, as well as the production of electricity, gas and oil. In this regard, due to the peculiarities of the economy of the Arctic region, which is based on the extraction of minerals, as well as the small number of permanent residents, the Yamal-Nenets Autonomous District positions itself as the Arctic region that combines favorable conditions for the civilized and traditional way of life of different categories of citizens of the Russian Federation, including indigenous small-numbered peoples of the North, originally employed in traditional industries [11, Zuev S.M.]. This is evidenced by the

study conducted in 2015 by the Rating Agency "RIA Rating", in which the agency's experts rated the subjects of the Russian Federation on the quality of life on the basis of objective indicators³.

Among the regions located in the Arctic zone of the Russian Federation, the Yamal-Nenets Autonomous District occupies a leading position (see Table 1).

Table 1

*Rating of the quality of life of the subjects of the Russian Federation
that are part of the Russian Arctic*

Region	Position in rating 2015	Position among the regions of the Russian Arctic 2015
YNAD	24 (49.16)	1
The Murmansk region	49 (41.41)	2
The Komi Republic	60 (39.15)	3
Nenets Autonomous Area	69 (34.98)	4
The Republic of Sakha (Yakutia)	72 (33.51)	5
The Arkhangelsk region	74 (32.95)	6
The Chukotka Autonomous Region	79 (25.83)	7

However, if we consider the life activity of the population of the autonomous area on a local scale, then we can clearly see the differentiation of the level and quality of life in the territorial context. Considering the social and economic development, functional specifics, as well as geographical and natural climatic conditions of the autonomous area, the populated areas can be conditionally divided into administrative, agro-industrial, transport and industrial, depressive. According to the level and quality of life, administrative, transport and industrial settlements are considered to be the most favorable, since it is here where the social, cultural and transport infrastructure is concentrated and developed, the population has a high level of purchasing power, etc. But at the same time, this group is most susceptible to external geo-economic and political risks, which is caused by the dependence of populated areas on the long-term plans of the fuel and energy complex and weak diversification of the economy, which may entail a variety of crisis situations.

Agroindustry and depressive ones lag behind in a number of indicators of quality and living standards. This is due to the fact that most of the settlements are in relative distance from administrative centers, where the transport and social infrastructure is not sufficiently developed, the issue of employment among the indigenous minorities of the North is acute.

In this context, the analysis of the following settlements located in the coastal zone of the Yamal-Nenets Autonomous District is of particular interest, namely:

³ Reiting rossiiskikh regionov po kachestvu zhizni – 2015. URL: <http://www.riarating.ru/infografika/20160225/630010958.html> (Accessed: 14 October 2016)

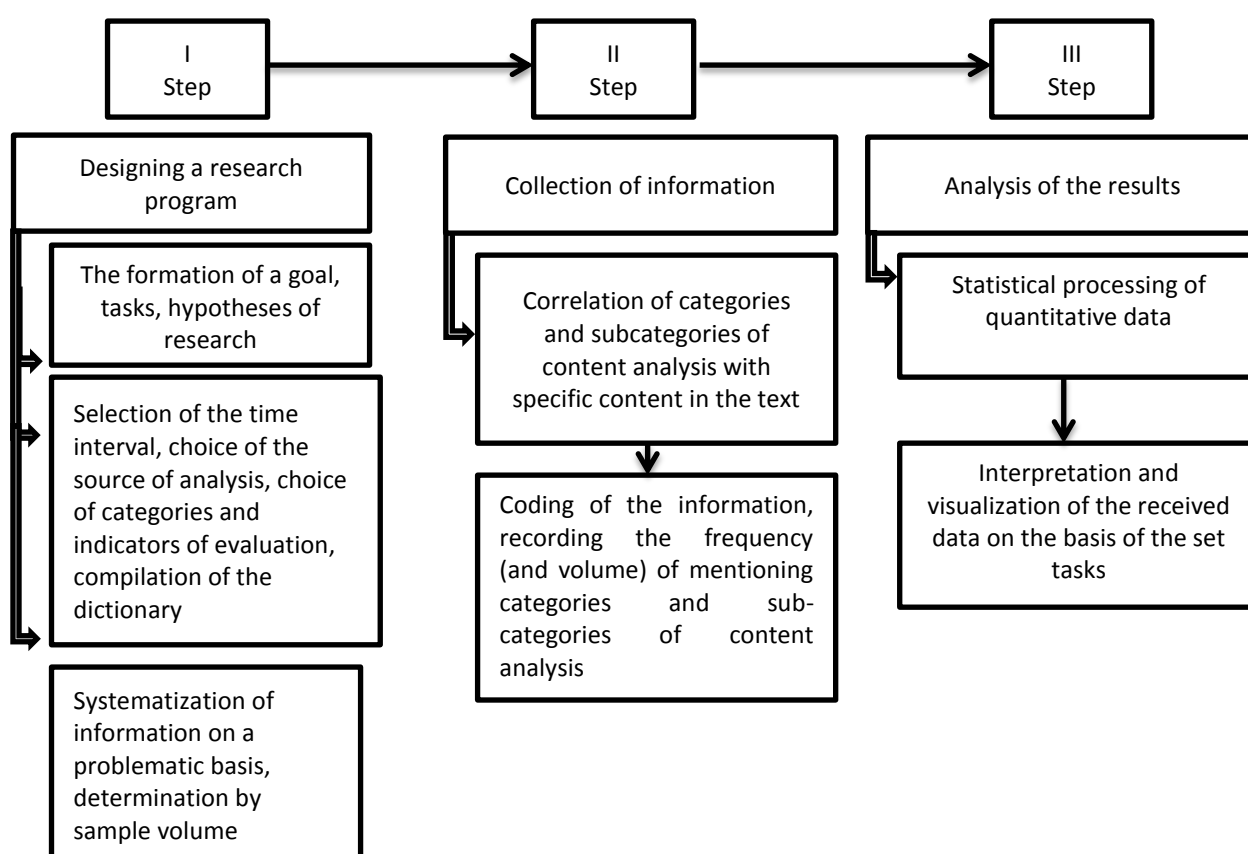
- 1) Salekhard, as an administrative center, where the administrative apparatus of the area is concentrated, the sphere of services is developed, it is a business, cultural and scientific center of the YNAD.
- 2) Nadym and Novy Urengoy, as industrial and transport cities, which are characterized by the most developed, in comparison with other cities of the region, industrial, transport and social infrastructure.
- 3) Tazovsky (Tazovsky district), Yar-Sale (Yamal district), as centers for industrial development and development of the agro-industrial complex, focused on the production of venison, fish products. The main income of settlements is the tax deductions of energy companies and subsidies of the district budget.
- 4) Gyda (Tazovsky district), the most depressed settlement, where the transport infrastructure is less developed, social and domestic services are at a low level. The basis of the economy of the village is reindeer husbandry and fishing.

The analysis of the above-mentioned settlements, on the one hand, will reveal the existing social, cultural, economic and environmental problems of the urban and rural population. On the other hand, as noted above, the information environment, generated by local media, which broadcasts a negative, neutral or positive attitude to a particular problem, will help to determine the public opinion about the quality and standard of living.

To achieve the goal, the authors have developed the following algorithm for the study of municipal news agencies, which provides the following stages.

Scheme 1

Algorithm for carrying out the research by the method of content analysis (compiled by the author)



In accordance with the scheme presented above, at the initial stage the authors develop the theoretical base of the research (goals, tasks, hypothesis, object and subject of research, choice of time interval, choice of source of analysis, evaluation criteria, etc.). The hypothesis of the conducted research consists in the attempt to extract from the articles published by the municipal mass media the semantic load for revealing a negative, neutral or positive attitude to the social, economic, political, cultural and environmental satisfaction of the resident population living in rural and urban settlements.

The authors plan to process the following municipal information agencies of the settlements of the Yamal-Nenets Autonomous District (Table 2).

The choice of mass media is due to the fact that municipal news agencies have a specific audience of readers within the settlement and are the most popular among local residents.

Table 2

Source of the content analysis of local media in the area of research

Municipality	Name of local media	Internet resources of news agencies
Municipal mass media ⁴		
Salekhard	Newspaper office «Polarny Krug»	http://polkrug.ru/
Nadym	Nadym TV news desk	http://trknadym.ru/
Novy Urengoy	ООО «Impuls»	http://www.tv-impulse.ru/
Tazovsky district	Mass media «TV studia Fact»	http://fakt-tv.ru/ludi/
Yamal district	«YaTV»	http://yamaltv.ru/

The content analysis of media publications is planned for the period from 2014 to 2016, inclusively. The choice of this period of time is due to the fact that there is no lack of information posted on the official websites of news agencies. In addition, this period of time is characterized by an unstable socio-economic situation in the country, in connection with which it will be important to trace the coverage of problems in the municipal media. The analysis of information materials published in the media is carried out in the following categories, which characterize the components of quality and living standards of the population (Table 3).

Table 3

Selection of research categories

Categories	Units of account (indicators)
Crime	Offense, crime, law enforcement activities
Emergencies	Accidents, epidemics, fires, floods, extreme weather conditions
Authorities	Activities of municipal authorities, bills, resolutions,
Healthcare	Level of morbidity, drug prices, health services (price, quality, problems)
Housing and communal services	Construction of housing stock, condition of communications, accidents in the housing and utilities sector (reasons, duration of elimination), condition of houses (emergency, maintenance), tariffs for housing and communal services, road

⁴ Munitsipal'nye sredstva massovoi informatsii / Ofitsial'nyi sait Pravitel'stvo IaNAO. URL: http://pravitel'stvo.ianao.rf/region/media_yamal/SMI_YANAO/Sr_Mas_Inf/Mun_SMI/ (Accessed: 17 July 2016)

	conditions
Social sphere	Social assistance, various social projects, charity
Education	The activities of educational institutions, the achievements of schoolchildren
The science	Scientific conferences, seminars, research
Industrial development of the Arctic	Mega projects, the role of oil and gas corporations, the activities of corporations, the development of deposits, the coverage of the Arctic development problems
Traditional industries of the indigenous economy	Reindeer husbandry, fishing, hunting, socio-economic development and problems of indigenous small peoples of the North
International Activities	International projects, cooperation, exchange of experience
Culture	Cultural events (festivals, competitions)
Sport	Sports events, competitions
Tourism	Tourism development, tourist activities

For the unit of the account, the articles are accepted in which there are the categories presented in Tab. 3, allowing us to identify the most popular topics covered by local media, broadcasting a positive, neutral or negative attitude to the characteristics that are being researched, which reflect the quality of life of the resident population in the studied area.

Encoding of the array of information will be carried out using the multilingual cross-platform Yoshikoder. The program Yoshikoder allows you to work with keywords in the text, count their number, build the proportions of their use with respect to the entire text and allocate a contextual environment for them.

Conclusion

It is assumed that based on the content analysis, a comprehensive assessment of the social and economic problems of activity of various categories of citizens living in the coastal territories of the Yamal-Nenets Autonomous District will be obtained. In addition, it is important to identify unbiased information in the publications of municipal media, as it is noted that local mass media is financed from municipal and regional budgets, respectively, the information provided for review is filled with profaned and laudatory news about the activities of state and municipal authorities.

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Specifics of life and pedagogical activity in the Far North (in terms of the Yamal-Nenets Autonomous District)



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Abstract. Living in the territory of Far North (and in the equated territories) has its specificity which is reflected in all aspects of life of the population. The authors consider natural and climatic features of the Polar region and the specifics of labor's process of locals (by the example of teachers). The review of statistics and educational policy of authorities of the Yamal-Nenets Autonomous District is carried out, the results of sociological research of teachers of the region are presented (questionnaire). The analysis of periods of living of the population at the Far North is presented, the degree of social rootedness of teachers is defined, the assessment of the main factors determining the interest of migrants to work at northern school and the main motives of moving to Far North is presented. The materials of a sociological research show in general the satisfactory estimates by teaching, conditions and quality of life that allow to predict their further fixing in the territory of the District, the dynamic and sustainable development of the autonomous District. The received results are applicable in the activity of governing bodies of the general education.

Keywords: *teacher, educator, comprehensive school, the Far North, the Polar circle, quality of life, sociological pro-file of a teacher, satisfaction with work, sociology of education*

The Far North is a part of the territory of Russia, located mainly to the north of the Arctic Circle, characterized by the extremely harsh climate. 45% of the territory of the Russian Federation lies in the Arctic, including such large cities as Murmansk, Norilsk and Vorkuta. The cities and regions of 14 subjects of the Federation and all the islands of the Arctic Ocean and its seas are classified as the regions of the Far North, as well as the islands of the Bering Sea and the Sea of Okhotsk¹. Some areas of 16 subjects of the Russian Federation are legally equivalent to the regions of the Far North. Besides Russia, the Arctic Circle runs through seven other countries: the USA (Alaska), Canada, Denmark (Greenland), Iceland, Norway, Sweden and Finland.

¹ Postanovlenie Sovmina SSSR ot 03.01.1983 №12 (red. ot 03.03.2012) «O vnesenii izmenenii i dopolnenii v Perechen' raionov Krainego Severa i mestnostei, priravnennykh k raionam Krainego Severa, utverzhdennyi Postanovleniem Soveta Ministrov SSSR ot 10 noiabria 1967 g. №1029» (vmeste s «Perechnem raionov Krainego Severa i mestnostei, priravnennykh k raionam Krainego Severa, na kotorye rasprostraniatsia deistvie Ukazov Prezidiuma Verkhovnogo Soveta SSSR ot 10 fevralia 1960 g. i ot 26 sentiabria 1967 g. o l'gotakh dlia lits, rabotaiushchikh v etikh raionakh i mestnostiakh», utv. Postanovleniem Sovmina SSSR ot 10.11.1967 №1029). URL: http://www.consultant.ru/document/cons_doc_LAW_403/ (accessed: 15 December 2016)

7.4% of the population of the global Earth community lived in eight subarctic states. Less than one percent of northerners (0.88%) permanently lives in the Arctic, [1, Lukin Yu.F., pp. 28–29]. "The population of the internal Arctic provinces, states, regions, autonomous districts, municipalities of the eight subarctic countries was 4.6 million people in 2012, including 2.5 million people in 9 subjects of the Russian Arctic, and 2.1 million people in all the remaining 7 Arctic countries combined".

The Yamal-Nenets Autonomous District is a constituent entity of the Russian Federation, occupying one of the most important positions in the state economy. The region is characterized by a significant territory and a high concentration of natural resources: 70% of the national and 22% of the world's explored reserves of natural gas and 12% of oil are located in Yamal. With a population of 584 thousand people (according to data on 01.01.2015) the average age of a resident is 33 years. Children and youth make up more than a quarter of the population of the district, which makes YNAD one of the most youthful subjects in Russia. Adequate management, dynamic and sustainable development of Yamal requires modern and highly effective system of general and professional education as the basis for the formation of human resources, human capital.

The system of formation of the Autonomous District has specific characteristics. Features inherent in this region of the country are determined by the mono-profile of the economic development, severity of natural and climatic conditions, specificity of territorial settlement, high level of material incomes. Almost every tenth inhabitant of the area is a representative of the indigenous peoples of the Far North (Nenets, Khanty, Komi, Selkup). Most of them lead a traditional way of life.

The high demand of the population of the Autonomous District for quality education system services is determined by a number of factors. First of all, this is due to the relatively high per capita monetary income of the population. According to this indicator, the region has been consistently ranked first in the all-Russian rating for many years and is comparable with such subjects as Moscow, the Nenets and Chukotka autonomous regions.

According to official statistics, the average monthly salary level in the Yamal-Nenets Autonomous District is significantly higher than the average level in Russia. Thus, the average salary of pedagogical workers of educational institutions of general education in organizations

(state and municipal forms of ownership) for January–June 2016 amounted to 94,673.6 rubles, which is 3% higher than the same indicator in 2015.²

The all-Russian average salary is 2.5 times less, it amounted to 36,828 rubles in the first half of 2016³. Secondly, this is due to the relatively high level of education of the population of the Yamal-Nenets Autonomous District. At the age of 15 years and older, 273 people per thousand have higher education. In Russia, this indicator is higher only in the capital cities (Moscow and St. Petersburg). Thirdly, the specificity of the territorial distribution of the population has a high level of urbanization (84% — urban residents, 16% — rural residents). At the same time, northern urbanization has a specific character of the Arctic (circumpolar) civilization [2, Lozhnikova I.F.].

The population of the Yamal-Nenets Autonomous District is characterized by uneven settlement. In areas with severe natural and climatic conditions, 184 thousand people live north of the Arctic Circle, this is one third of the population, and two thirds — to the south of the Arctic Circle, where the natural and climatic conditions are milder. Here are all the large and medium cities of the Autonomous District.

The analysis of the statistics shows that the educational policy is aimed at the formation of modern educational infrastructure, increasing of coverage of high-quality general education services for children (preschoolers — 100%, schoolchildren — 100%), modernization of teaching conditions, raising the level of professional skills of teachers in Yamal. Particular attention is paid to the implementation of programs of ethno-cultural education. 14 nomadic schools and kindergartens conduct educational activities in the territory of YNAD. More than 4 thousand children from indigenous peoples of the North live all year round in boarding schools. In order to modernize the boarding schools, certain activities are being implemented, including the practice of traditional fisheries in agricultural enterprises, the purchase of plaques for boarding schools, the subjects of ethnocultural orientation, the approximation of the living conditions of children to family specifics, etc.

In a modern school, teachers are challenged by a constant review of the existing methods of the educational process, as well as their relationships with students, colleagues, parents, which raises the issue of adapting the teacher to new transforming conditions and requirements. The necessity of constant adaptation objectively increases the level of anxiety of pedagogical workers

² Ofitsial'naya statistika\Rynok truda i zaniatost' naseleniia URL: http://www.yamalstat.gks.ru/wps/wcm/connect/rosstat_ts/yamalstat/ru/statistics/employment/ (accessed: 15 December 2016)

³ Ofitsial'naya statistika\Rynok truda i zaniatost' naseleniia URL: http://www.gks.ru/free_doc/new_site/population/trud/itog_monitor/2-16/tab02.xlsx (accessed: 15 December 2016)

and their uncertainty about their capabilities. In these conditions, the important task is to improve the quality of the work life of the teachers, i.e. the level of satisfaction of the versatile needs of teaching through his professional activities. Teachers are not always and not entirely satisfied with the conditions of work and life, wages, relations in the teaching staff, their immediate supervisors, which affects the performance of individual workers and the effectiveness of the activities of educational institutions in general.

Advanced development allowed regional education to be ready to introduce new standards, competitive indicators, informatization and solving the problems of nomadic schools, etc. However, there are "pain points" in the development of the regional education system.

Characteristics of the general education system of YNAD

Number of educational institutions at the beginning of 2014/2015 academic year was 136 units, of which only two are non-state. The number of daytime public schools is 127. There is a decrease in number of general education institutions from 156 in 2006/2007 academic year up to 136 in 2014/2015 academic year⁴. Reduction is noted for all categories of general education institutions (state and municipal, day and evening) without exception.

The ratio of schools located in urban and rural areas is maintained in the range of 62–65% of urban and 38–35% of rural schools. Despite this trend, there is a decrease in number of students. From 2006/2007 to 2014/2015 academic year in the schools of YNAD the number of students decreased by 10%: there was a reduction from 76.7 to 69.3 thousand people. There is also a decrease in number of teachers: there were 5,184 teachers in 2014/2015, and in 7% less in 2006/2007 academic year⁵.

The proportion "teacher / pupil" was practically not affected by the reduction in the number of schools, teaching staff and the contingent of students and it varies in urban schools 1: 15-1: 16, and in rural schools 1:11. Reduction of the number of schools is much faster than reduction of the number of students, which increases the burden on educational institutions. On average, 497 pupils were trained in one public school in 2006/2007, and 514 students in 2014/2015. In day schools, the number of students increased from 509 to 535 people. In urban schools, the load on educational institutions has increased even more: from 619 pupils in daytime public schools in 2006/2007 academic year up to 666 people in 2014/2015 academic year.

⁴ Obshcheobrazovatel'nye uchrezhdeniia // Ofitsial'nyi sait Territorial'nogo organa Federal'noi sluzhby gosudarstvennoi statistiki po Yamalo-Nenetskomu avtonomnomu okrugu URL: http://www.yamalstat.gks.ru/wps/wcm/connect/rosstat_ts/yamalstat/ru/statistics/sphere/ (accessed: 15 December 2016)

⁵ Obshcheobrazovatel'nye uchrezhdeniia // Ofitsial'nyi sait Territorial'nogo organa Federal'noi sluzhby gosudarstvennoi statistiki po Yamalo-Nenetskomu avtonomnomu okrugu URL: http://www.yamalstat.gks.ru/wps/wcm/connect/rosstat_ts/yamalstat/ru/statistics/sphere/ (accessed: 15 December 2016)

Based on the official statistics data on general education institutions of the Yamal-Nenets Autonomous District, we can conclude that the process of optimizing the general education system is realized, including the reduction of the number of schools and teaching staff.

A few works on pedagogy [3, Preobrazhenskaya G.A., Tikhonova D.L.], sociology [2, Lozhnikova I.F.] and physiology [4, Bagistova E.A.] are devoted to the study of pedagogical activity in the Far North. The aspects of life and work activity of teachers in Yakutia (Russia) [5, Danilov D.A.], [6, Tereshkina G.D.] and in Alaska (USA) [7, Williamson G.] are most widely disclosed.

The sociological analysis of the two aspects of the life of the school teacher (professionally pedagogical and social) in living conditions in the Far North was carried out in works [8; 9]. General analysis of the sociological portrait of a teacher is presented in works [10, Osinsky I.I.], [11, Sokolova E.A.] and [12, Zasytkin V.P.]. In these works, the following main features of the sociological portrait of the teacher are considered: socio-demographic indicators of teaching as a social and professional community; gender specificities of teaching; the way of life of the teaching of the district; social well-being and free time of teaching. The factors of satisfaction with the profession are determined; the factors that impede the productive activity of a teacher.

The results of sociological research

The team of the Tyumen Scientific and Educational Center of the Russian Academy of Education and the academic sociological laboratory of the Department of General and Economic Sociology of the Tyumen State University in 2016 conducted a sociological study of the social and professional portrait and the quality of life of the teaching of the Yamal-Nenets Autonomous District⁶. Consideration of the specifics of pedagogical activity in the Far North we begin with an analysis of the social portrait of teaching and the degree of influence of specific "northern" conditions on the work of teachers of general education.

Large-scale development of any region is accompanied by serious demographic shifts, powerful migration processes. The organization of everyday life is complicated by dozens of primary and less significant social tasks. One of the most important among them is the creation of a system of general and professional education. Together with the creation of the material base of educational institutions, it is necessary to form qualified pedagogical collectives. If in the

⁶ The main method of research: questioning. The survey was carried out through questionnaires in printed way, as well as through the Internet. Period: March—July 2016. The total number — 4830 teachers of the Yamal-Nenets Autonomous District (according to the data of the Territorial Body of the Federal State Statistics Service for the Yamal-Nenets Autonomous District at the end of 2014). Selective total number — 680 respondents. The standard sampling error is 3.55% (calculation according to the V.I. Paniotto formula), which indicates the necessary reliability of the received data. The method of selecting of sampling units is repetitionless, depending on the number of sampling stages, the type of sampling is a single-stage sampling. Type of sample: quota with representation by sex and length of pedagogical work.

organization of production in many cases it is possible to follow the way of using the shift method or redeployment of existing production teams, then in education, only a variant of long-term plans and unit selection of personnel is possible, it remains the only one after the cancellation of the state distribution of graduates of educational institutions.

The consequences of massive migratory shifts are traced when analyzing the periods of residence of the population in the Far North. Besides the indigenous population, the Yamal-Nenets Autonomous District is inhabited by a large number of migrants who have come for temporary or permanent residence. Thus, the entire sample can be divided into three categories. Among the teachers who participated in the study, one in seven (15%) represents the indigenous population. The largest group of respondents attributed themselves to newcomers living in Yamal constantly (78%). Every thirteenth teacher (8%) is also a visitor, but oriented only to temporary stay ("shift worker").

To determine the degree of social inculcation of teachers, it is important to pay attention to the question "How many generations of your family lived in the Far North?". More than half of the teachers are Yamal inhabitants of the first generation (56%). In every third case (30%) two generations live in the Far North (in addition to the respondent, before him lived / his parents lived in Yamal). The answers which are less common: "three generations" (7%) and "four generations and more" (8%). Respondents who identified themselves as indigenous people indicated that three or more generations of their family lived / lived in the Far North.

Assessing the level of "rootedness" of the population, it is important to analyze the answers to the question of a large-scale intergenerational pendulum migration: "Do the generations of your family repeat the cycle of "migration to the North — migration from the North". For 41% of the teachers surveyed, this migration scheme has become familiar (some members of the family practice such migration in a third (33%) of cases, and a similar work strategy is for 8% of respondents), 59% of respondents answered this question negatively.

The distribution as per length of stay in the Far North shows the new-settler population character. The duration of residence in the Far North regions of the majority of respondents is from 26 to 40 years (27%) and from 16 to 25 years (24%). Since there are quite a large number of visitors on the territory of Yamal, it is important to find out where they came from to the Far North. Among the main "donors" of teaching staff are Ukraine (10%), Kazakhstan (5%), Belarus (4%). Among the regions of Russia, the south of the Tyumen region is leading (12%), Bashkortostan (5%), Kurgan (4%), Omsk (3%), Moscow and Novosibirsk (2% each). Contrary to the widespread stereotype that the North is "replenished" at the expense of visitors from the south of the Tyumen

region, in reality only 1 out of every 8 respondents came from there, and the least number of visitors came from the Khanty-Mansiysk Autonomous District (only 2%).

The evaluation of the main factors determining the interest of migrants to work in the northern school is of special interest. For two-thirds of the teachers of the Yamal-Nenets Autonomous District who took part in the sociological survey, the **main motivation for moving** to the Far North was the "high earnings perspective" (35%) and "moving after the spouse" (35%). More than a third of respondents aged under 30 (more than 38%) came to "northern salaries". Interest in high earnings, which "promises" the Far North, was indicated as a main motive for the move for all categories of respondents (the average for the sample is 35%), with the exception of teachers over 60 (21%). For the older age categories, the most relevant is the move to YNAD following the spouse (42% among the respondents aged 50–59 and 29% among the teachers up to 30 years old).

Parents / relatives of every third respondent lived in the Far North, and they came here according to the "family tradition" (33%). 29% of teachers came to work in the Far North as a "test of themselves". Such factors as "interest in extreme conditions of life and work" (11%) became less significant here, "interest in ethno-culture of the peoples of the Far North" (7%), "referral to work by educational authorities" (5%), "interest in training of children whose parents live in tundra" (4%).

Analyzing the received sociological information attention should be paid to the potential for the "reverse migration": the proportion of teachers who plan to reside on the Yamal Peninsula after retirement is significantly higher than those who currently consider themselves indigenous to Yamal. If currently 14% of the teachers referred themselves to this, then every fourth (!) respondent (24%) plans to reside in the district after retirement. This may indicate a significant increase in the positive trend of "rooting" the population of Yamal, which is an indicator of the successful socio-economic development of the Autonomous District.

Another notable trend is the increase in the attractiveness of the southern Tyumen region and the city of Tyumen among potential migrants. If 12% of respondents have come from this region by now, then after retirement, a quarter of respondents (27%) plan to move to the south of the Tyumen region (and, in particular, to the city of Tyumen). We believe that this is primarily due to large-scale housing construction programs in Tyumen for the northerners, a milder climate (adaptation to which for the elderly is easier compared to the southern regions).

A detailed description of the demographic and migration processes is due to the fact that they directly form many aspects of social life. Half of respondents (51%) state about the specifics,

including every fifth respondent note the presence of significant features (20%). Let's consider the exact differences here.

1. Pedagogical technologies (27%) (teachers of the Far North are keeping pace with modern achievements in pedagogical science, they make wide use of innovative pedagogical technologies, children are more prepared to enter higher education institutions, participate in all olympiads where advanced technologies are used, systematic innovation activity on approbation of new pedagogical technologies on the territory of Yamal-Nenets Autonomous District, the advanced pedagogical technologies are tested, which raises the requirements for the organization of the training process and qualifications of the teacher, health-saving educational technologies using northern national color are used).

2. Technical equipment (35%) (high technological infrastructure of schools with modern computer equipment, in the North there is the best material and technical support of schools, so more opportunities, serious financing of innovation, low quality and speed of the Internet network does not allow using Internet resources in the required volume).

3. Peculiarities of the indigenous peoples of the North, nomadic way of life (52%) (a feature of work with children living with their parents in tundra and a nomadic way of life; part of the parents lead a nomadic way of life, and so the children come and go from school for the holidays not on school schedule, therefore, it is necessary to have time to give and fix the school lesson material; adaptation of children coming from tundra where their parents work; children of the national structure, they need a special approach; there are students with insufficient knowledge of the Russian language; pedagogical technologies should take into account the traditional methods of life of the local population).

4. Territorial remoteness (12%) (there are no higher educational institutions in the city and it is far to go to the nearest universities; the territories of the Far North are far from cultural and scientific centers, which limits the possibility of full-time participation in olympiads, contests, scientific and practical conferences; remoteness from social and cultural centers does not allow to use some pedagogical technologies, makes it difficult for the students to be socially adapted).

5. Displacement of the training schedule (10%) (registration of migration activity of students and their families during the holidays).

6. Grouping of studied topics (6%) (due to a large number of acted days, children often get sick, leave for rest; frosts, quarantine — a lot of material is given remotely and for independent study; distance education during unfavorable conditions, low temperatures; long polar night has an impact on health and work — teachers and children get tired quickly; it's impossible to explain to children the changeability of seasons, they do not understand what means "gardens are in full bloom"; short classes outside during physical culture lessons, the impossibility of conducting practical works outside).

7. Complex transport scheme; poor quality of roads or their complete absence (5%) (half of the children should be transported, i.e, they live far from school, a complicated transport scheme: leaving the village is difficult, a bad winter road to the city, the lack of a regular road connection with the Big Earth).

To assess the extent and nature of the impact of living conditions and work in the Far North, we will consider the following aspects: specific "northern" conditions and factors that complicate the work of urban (settlement) pedagogical teams and the personal life of teachers, the optimal solutions proposed by teachers to solve specific "northern" problems.

Among the main specific "northern" conditions and factors that complicate the work of pedagogical collectives are: climatic conditions (90%); territorial distance from other subjects of the Russian Federation and major educational centers (85%); Inaccessibility during off-season (65%); the shift in the schedule of the educational process (22%) (the departure of children during the year on vacation with parents outside the region); interethnic interaction (10%).

The teachers also mentioned problems of concern, which are not specifically "northern" and are spread throughout the country: the introduction of distance education; housing problems of teachers; large load of teachers to compile current, accounting and certification documentation ("paper work"); insufficient material and technical equipment; increase in the proportion of "correctional" children.

What kind of help / support / assistance would the education staff like to receive?

Respondents' answers to the question about the desired measures of support, assistance is grouped by us into eight thematic blocks. Each respondent could independently offer one or several answers:

1. Social benefits and guarantees (85%) (to resume payments for "sanitation" and sanatorium treatment for teachers, to restore health during the school year for several days outside the district, increase of the northern allowances, help in resettlement to the south of the region at retirement age; the development of a recovery program for people living in the Yamal-Nenets Autonomous District).

2. The organization of the educational process (82%) (to ensure a high level of organization of work and rest for teachers, so that a person does not work from morning till late at night, changing the mode of work during the winter months, reviewing the curriculum and the possibility of a remote crediting system, working only on the first shift).

3. Housing (75%) (allocation of departmental housing on terms of official hiring, provision of young teachers with housing for fixing them in the Far North, providing teachers with housing in capital execution, for those who had been working at one enterprise for more than 15 years).

4. Financing (70%).

5. To raise the level of wages, payment of bonuses (65%).

6. Pension (48%) (preferential calculation of the length of work when granting pensions, benefits for working pensioners, increase of pensions for all categories of pedagogical workers).

7. Teaching of the pedagogical staff (45%) (creating the opportunity for further training on the basis of cooperation with the scientific centers of the country; attracting specialists to the Far North for conducting practical-oriented courses, lectures, trainings; the possibility to improve the

qualification in prestigious universities; master classes of lessons on new methods; assistance in developing practical training).

8. To develop the transport infrastructure (45%) (to eliminate the difficulty of leaving the district, to establish a year-round road connection with the "Big earth").

9. To raise the quality of life (28%) (to strengthen the quality control of imported products, food, to improve the livelihood of all northerners, to build modern warm schools and housing).

10. Culture and leisure (22%) (organization of theatrical performances from other cities, the development of recreational activities for young people; to build theaters, museums and other cultural institutions).

Among the respondents there was a group of "pessimists" (3%) who did not offer any measures and solutions to these specific problems. "Moving" as a way of solving problems, only 2% of teachers mentioned ("only relocation and living in more favorable climatic conditions" will save the situation).

In order to get the most complete idea of the quality of life, it is important to analyze the dynamics of the material situation in recent years. The financial position of the teaching staff has improved noticeably: more than half of the respondents noted that the financial situation of their family has improved substantially or slightly, a quarter of respondents mentioned that their families' financial situation remained unchanged, only 5% of the teachers mentioned about deterioration in their financial conditions. In the opinion of the majority of respondents, over the last five years the financial situation of their family has improved (56%), including every ninth teacher notes a significant improvement in financial situation (12%). Financial position has remained unchanged for every fourth respondent (24%). The worsening of financial situation is noted by 20% of respondents (5% mentioned significant deterioration).

Also, the study has made the attempt to make the assessment of the immediate prospects by the population. Realizing that the level of material interest, incomes, plays the main role in securing the population in the northern regions, the following question was asked in the questionnaire: "In your opinion, how will the material situation of your family be changed in five years?". The expectations of the respondents were divided as follows: one third of respondents believe that the financial situation will be improved slightly (30%), another third of respondents believe that "everything will remain without significant changes" (30%). The remaining respondents are inclined to polar opposite assessments: "a significant improvement" in the financial situation of their families (17%), 8% of the respondents expect substantial deterioration.

The majority of respondents assess the level of financial situation of their families as follows: "we have enough money only for food and clothing, but the purchase of durable goods is a problem" (37%) and "we have enough money to buy durable goods, but not a car or an apartment" (35 %).

"we have enough money for products and compulsory spending, but buying clothes causes serious difficulties" for 13% of respondents. 13% of respondents consider themselves to be prosperous (the difficulty can be caused by the purchase of very expensive things), while only 2 persons said that they "barely makes ends meet and do not have enough money for food" (a statistically insignificant number on the background of the entire sample) (see Table 1).

Table 1

Distribution of respondents' answers to the question: "Assess the level of the financial situation of your family?" (% to the number of respondents)

Category	Possible answer	Frequency	%
<i>Beggars</i>	we barely make ends meet and do not have enough money for food	2	0.3
<i>Poor</i>	we have enough money for products and compulsory spending, but buying clothes causes serious difficulties	85	12.5
<i>Low-income</i>	we have enough money only for food and clothing, but the purchase of durable goods is a problem	240	35.3
<i>Secured</i>	we have enough money to buy durable goods, but not a car or an apartment	253	37.1
<i>Prosperous</i>	Family is prosperous, the difficulty can be caused by the purchase of very expensive things	90	13.2
No answer		10	1.5
Total		680	100.0

Let us consider the character of the housing of the teachers of the Far North. The majority of respondents live in a separate, well-maintained apartment (57%). 11% of respondents live in a rented apartment or house, and a similar proportion of respondents conducts the economy in a service house (12%). 6% of teachers has their own houses. 6% of respondents did not answer the question (see table 2).

Table 2

Breakdown of answers to the question: "Describe the nature of your housing" (% to the number of respondents)

Possible answer	Frequency	%
Separate apartment in property	384	56.5
Dormitory accommodation	54	8.0
Own house	42	6.1
Rented apartment/house	75	11.1
Service apartment/house	84	12.4
No answer	41	6.2
Total	680	100

More than three quarters of the teachers estimate with optimism (40%) or calmly their immediate future without any worries and illusions (39%), 18% note the alarmist motives, less

than 1% of respondents consider their future "with fear and despair". The level of anxiety of women is significantly higher (22%) compared to men (14%).

Then we consider such important question for sociology: what social stratification group does a respondent belong to? There are many approaches to determining the criteria of the middle class. One of them is self-identification. Other approaches are based on a specific amount of sustainable income sufficient to meet a wide range of material and social needs, or on a set of criteria: the availability of higher education, the non-physical nature of labor, and so on. Two-thirds of teachers rank themselves as middle class (65%), and one in five identifies himself with the social layer "above average" (20%).

Conclusion

The materials of sociological research allow us to make the following main conclusions:

1) Two significant trends have been revealed in the behavior of teachers. First, the potential for "reverse migration" (the proportion of teachers who plan to reside on the Yamal Peninsula after retirement) is significantly higher than those who currently consider themselves indigenous to Yamal. Secondly, the attractiveness of the southern Tyumen region and the city of Tyumen has been increased among potential migrants.

2) The life and work activity of a teacher of the Yamal-Nenets Autonomous District, belonging to the territory of the Far North, differs in a number of specific features: health-saving educational technologies and games using northern color are applied; peculiarities of the indigenous minorities of the North, a nomadic way of life; territorial distance from cultural and scientific centers; displacement of the training schedule; grouping of the studied topics in connection with a large number of acted days; complex transport scheme; poor quality of roads or their complete absence; interethnic interaction.

3) To improve the social and professional status, the quality of life of teachers at Yamal and to optimize the work process, it is necessary to intensify / implement the following measures to support the employees of the education sector: regular and free (preferential) vouchers for sanitation; benefits for teachers during their stay in the Yamal-Nenets Autonomous Region, as well as for traveling around the country; guaranteed housing for the period of work and a competitive level of sale of an apartment at Yamal to purchase real estate in another region of the country; increase of wages; the introduction of additional payments and social guarantees for a teacher working / worked in the Far North; increased pension at the end of employment; compensation of teachers' expenses for cellular communication services; restoration of preparatory classes for children of the indigenous small-numbered peoples of the North for teaching Russian and

preparing for school; expansion of teaching of the native language of indigenous minorities of the North in the framework of the educational implemented program; providing psychological and methodological training for teachers to work with children of indigenous small peoples of the North.

4) The important criterion determining the quality of the educational process is the professional, economic and social well-being of educators, teachers working in the education system. The formation of the education system is accompanied by significant and contradictory changes in the theory and practice of teaching and educational processes.

Teachers should apply new teaching technologies that are adequate to modern technological opportunities and assisting the child's entry into the information society and the modern community. There is a transformation of the role of the teacher, which is no longer the only source of information for the student. Increasingly important are the functions of a mentor. Most school teachers identify themselves with the middle class.

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REVIEWS

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The Arctic Convoys and the Kara Expeditions (news from the British Center)



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Northern (Arctic) Federal University named after M.V. Lomonosov, Arkhangelsk, Russia.

Abstract. In her article the author comments on two important events connected with the exploration of the Arctic and the significant role it played during the WW2. Valentina Golysheva gives a retrospective view of “Dervish-75”, International Forum in NArFU and the “Kara Expedition” conference in Salekhard held in autumn of 2016.

Keywords: *Dervish-75, fraternity of the Russian Convoys, convoy, Kara expeditions, visit of Princess Anne, loss of Convoy BD-5, patriotic education*

Autumn-winter of 2016 passed under the sign "Dervish-75" in the British Center of the NArFU

Beginning from August 2016 the events related to the Arctic convoys involuntarily intertwine with the Kara expeditions of the Great Patriotic War. Just in August 1944 the German submarine U-365 shipwrecked the transport vessel “Marina Raskova”, and two minesweepers T-114 and T-118 from the escort of BD-5 convoy (White Sea — Dixon), the transport vessel went to the Arctic, to the islands in the Kara Sea with winterers and their families. 381 people died for a



Figure 1. Valentina Golysheva, Lynn Stopani and Robert Owen, participants of Dervish-75

few moments, mostly families from the Arkhangelsk region: winterers, their wives and children, military seamen of the Northern Fleet. A terrible tragedy even for wartime! This tragedy was mentioned in the film “Dervish. The Brotherhood of the Northern Convoys”, which was shown at “Dervish-75” forum at the NArFU on August 30, 2016.

A large delegation from Great Britain came to Arkhangelsk to celebrate “Dervish-75”.

The delegation consisted of people of different generations: the veterans of the Arctic convoys, relatives of veterans who already died and many public figures.

It was gratifying to see 96-year pilots-veterans of 151 wing Victor Bashford and John Elkington. Our common friend, 92-year-old veteran, the Scotch David Craig was present at this anniversary, we meet each other regularly on Skype at English classes with the students of the international department.

At "Dervish-75" forum, a large diplomatic corps of the countries, members of the allied forces were represented in the NArFU: ambassadors, consuls, military attaches. And finally, we should mention the visit of a special guest from the Great Britain, princess Anna. Her Royal Highness visited the NArFU exhibition and talked to many students and teachers of the Northern Arctic Federal University. As the director of the British Center, I was honored to present Princess Anna my book "A Flashback to the Arctic Convoys". Specifically, for the Forum, 100 copies of the book "Memoirs on the Arctic convoys" were published, and it was presented to all participants of the Forum, as well as to the participants of the University Conference "Lend-Lease and the Northern Convoys: from the Regional Cooperation to the Global Coalition". Sometime later, in my name, the Director of the British Center, the letter from the Buckingham Palace was received, with gratitude from Princess Anna for the presented book.

Continuing the topic "Dervish-75" it is necessary to mention the December conference on the Kara Expeditions, which was held in Salekhard with the support of the Governor of the Yamal-Nenets District, Dmitry Nikolayevich Kobylkin. As the director of the British Center and author of the book about convoys, I was also invited to the conference "Kara Expeditions". I had to make the presentation of the book and to make a report on topic "the history of the Arctic Convoys in 1941–1945 in the memoirs of the veterans of the Allied forces." A distinctive feature of this conference was the personal interest of the Governor of the Yamal-Nenets region, D.N. Kobylkin in the results of research conducted by search teams in the Arctic to search for wrecks in the Kara Sea during the Great Patriotic War; in the search and reburial at the island Bely of remains of the sailors of the Northern Fleet from convoy BD-5, died in August 1944.

Particular attention, warmth and concern from the Governor and his friendly team was felt by the family members of the deceased sailors, invited to the conference. For example, as soon as we arrived in Salekhard, the organizers of the Kara Expeditions project immediately took from me, the daughter of the deceased sailor of the Northern Fleet, DNA in order to compare with DNA of one of



Figure 2. Communication with Princess Anna

the remains reburied on the Island Bely.



Figure 3. The capsule with sea water from the Kara Sea, from the site of the death of the vessel "Marina Raskova"

For us, the members of the families of the deceased sailors, the official reception was held in the regional administration of the governor, where a hearty conversation took place, when each guest shared the military history of the departed ancestors.

All the members of the deceased families were handed, as a memorable gift, the capsules with the sea water taken from the bottom of the Kara Sea, at the site of the death of the vessels "Marina Raskova" and "Alexander Sibiryakov", as well as photo albums

and the set of CDs about the Kara Expeditions.

My students of the International Department watched the film "the island of hope" in one breath. The relatives of the dead seamen and participants of the "Kara expeditions" Conference could not but appreciate the sincere warmth and sensitivity of the regional administration of the Yamal-Nenets region.

In general, the Conference "Kara Expeditions" was a great success, since it featured speakers from many regions of Russia, starting from Sevastopol, St. Petersburg and ending with Yakutia. Looking at the cadets and schoolchildren invited to the conference "Kara Expeditions", we involuntarily felt a sense of pride for Russia, where the younger generation is brought up in the spirit of patriotism and respect for their land, where they honor the memory of fathers and grandfathers, heroes of the war.

The unique exhibition with exhibits raised from the bottom of the Kara Sea, from the dead ships "Alexander Sibiryakov" and "Marina Raskova" was introduced to the guests of the Conference in the lobby of the conference hall. The conference was attended by both daughters of captains from the dead ships. We found interesting the idea of creating the Kacharava-Demidov fund (in honor of the two captains), expressed by the moderator of the conference, journalist S.V. Shulinin. We fully support this patriotic idea, as the country should know the names of the heroes of the Arctic during the Great Patriotic War.

I would like to express our deep gratitude on behalf of all the residents of the Arkhangelsk region to all organizers for the excellent organization of the Conference "Kara Expeditions" in Salekhard, as well as to the government of the Yamal-Nenets Autonomous District, which carries

out such bold and difficult projects in the Kara Sea after 70 years since the end of the Great Patriotic War, perpetuating the names of fallen war heroes in the waters of the Arctic.

Valentina Golysheva, Candidate of Philology, associate professor of the English language Department at the Higher School of Socio-Humanitarian sciences and international communications, the director of the British Center of the NArFU has been studying the history of the Arctic during the Great Patriotic War for many years. Valentina is the author of two books about the Arctic convoys, in which amazing memories and stories are collected about the heroic exploits of the sailors-veterans of the navy and merchant fleet of the Allied forces who took the active part in the Arctic convoys for the delivery of military and food cargoes under Lend-Lease to the northern Ports of Russia in 1941–1945.

In June 2012, by the invitation of the British company SAGA Valentina Golysheva participated in the cruise "On the way of the Arctic Convoys" together with the veterans of the Allied forces, which enabled her to collect invaluable material in the form of memoirs of live witnesses of military events in the Arctic and subsequently to publish their stories in the book "A Flashback to the Arctic Convoys". The book also contains numerous letters, diary entries and verses of veterans, extracts from the British newspapers, which significantly complement the historical picture of military events in the Arctic and the Russian North.

In February 2015, by the initiative of the British Belfast Association, Valentina Golysheva's book "A Flashback of the Arctic Convoys" was presented to the British veterans, the members of the Russian Convoys Club in London and the relatives of the departed veterans, aboard Her Majesty's ship "Belfast". The veterans and relatives were happy and grateful to receive as a gift from the university from the hands of the author a book in which the names of their fathers, many participants of the Arctic convoys, are immortalized.



Figure 4. Military Attaché of the Canadian Embassy at Forum in NArFU



Figure 5. Peter Tash, the Australian Ambassador, at Forum in NArFU



BUCKINGHAM PALACE

7th September 2016

Dear Dr Golysheva,

The Princess Royal has asked me to thank you very much indeed for the gift of your book 'A Flashback to the Arctic Convoys' which you so kindly gave to Her Royal Highness during the recent visit to the Northern (Arctic) Federal University in Arkhangelsk.

Her Royal Highness and her husband Vice Admiral Sir Tim Laurence were delighted to have had the opportunity to tour the exhibition stands showcasing the wide range of innovative research programmes of the University, and to meet so many staff and students. The Princess was also interested to read your account of meeting Her Royal Highness at the British Ambassador's Reception in 2014, which you describe in your book.

Yours sincerely
Nick Wright

Captain Nick Wright, CVO, Royal Navy
Private Secretary to
HRH The Princess Royal

Dr. Valentina Golysheva

Figure 6. Letter from Buckingham Palace



Figure 7. The British participants of Forum with students of NArFU



Figure 8. Daughters of two captains (Gyulnar Viktorovna and Nadezhda Anatolievna)

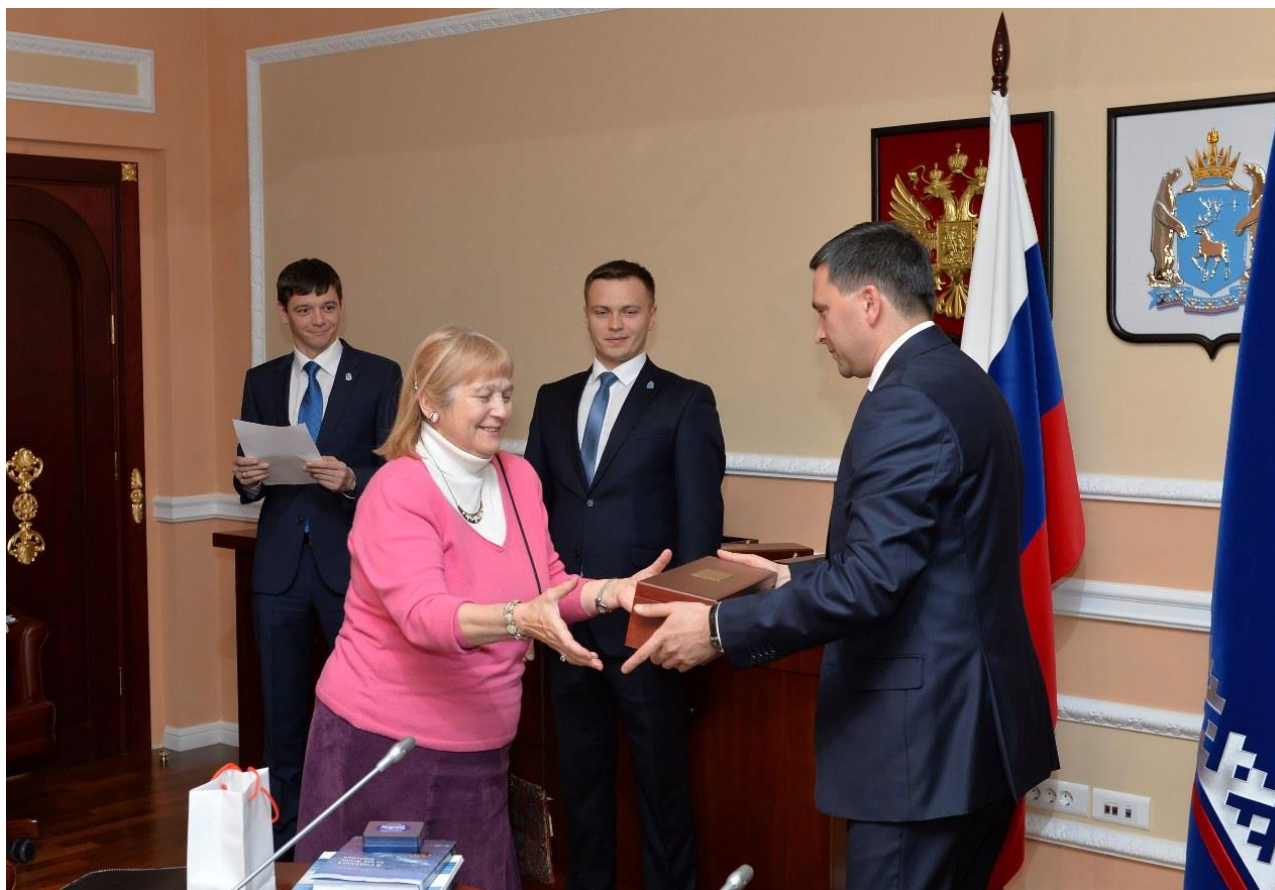


Figure 9. Handing over the capsule by the Governor of YaNAD, D.N. Kobylkin

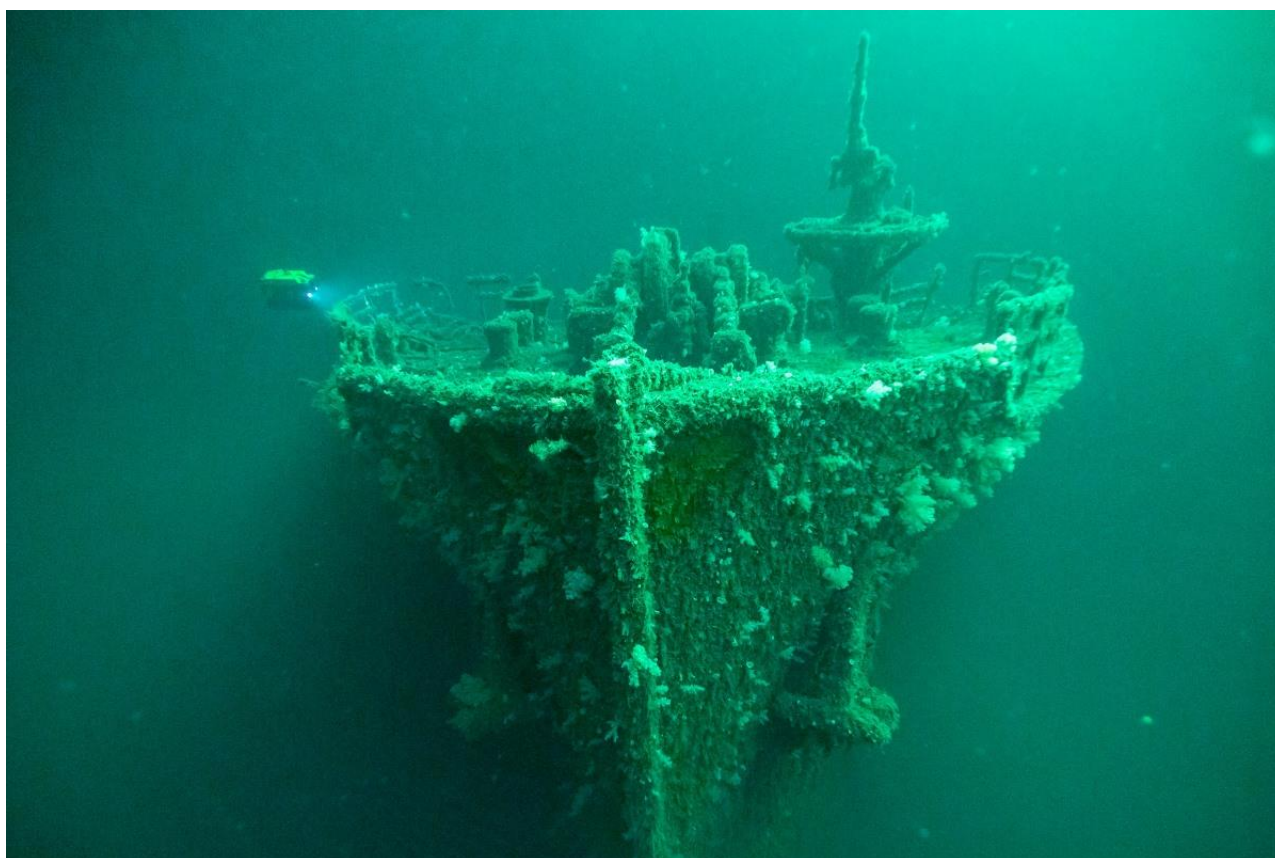


Figure 10. Underwater surveys of the vessel "Marina Raskova" at depth of 47 m

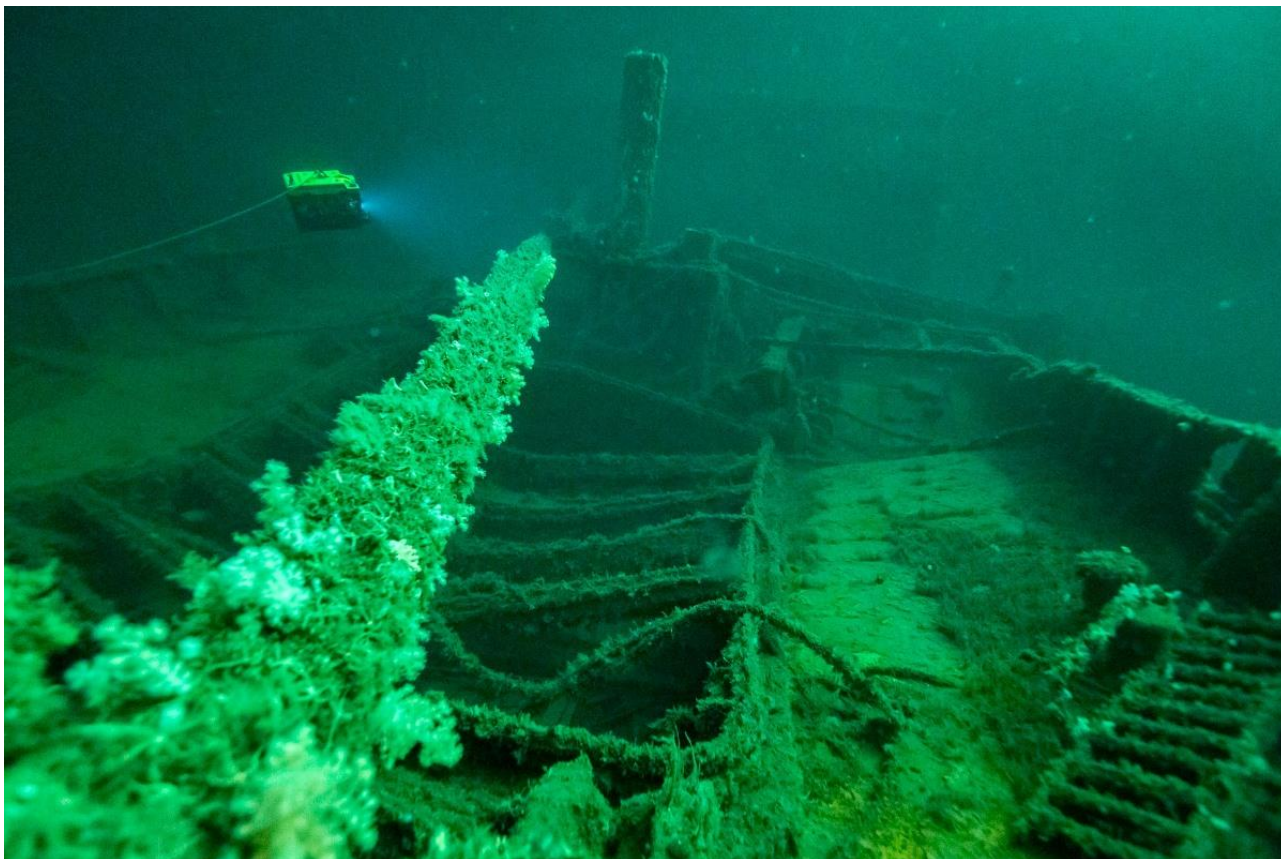


Figure 11. Underwater surveys of the vessel "Marina Raskova" at depth of 47 m



Figure 12. General photo at the reception of the Governor of YaNAO

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Solovki as an object of cultural heritage of the Arctic



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Abstract. Solovki as a multi-subject object of cultural and natural heritage of the Arctic is one of the unique monuments of our time, bringing together at one place several historical periods of life in Russia. The review article presents one of the first attempts in the scientific literature to make a comprehensive approach to the study of all the cultural and historical heritage of the Solovetsky Islands from ancient times to the present day, based on a multidisciplinary approach.

Keywords: *Solovetsky Islands, Solovki, archaeological sites, labyrinths, the monastery of the ROC, Solovetsky administrative and patrimonial district of Pomorye, the monastery prison, SSPC, training detachment of the Northern Fleet, the Solovetsky Museum-Reserve, UNESCO, the Solovetsky forums, local self-governance*

*Dedicated to the memory of Antonina Alekseevna Soshina (1948–2013),
who devoted her whole life to Solovki.*

This article makes one of the first attempts in the scientific literature known to me, using interdisciplinary approach methodologically, to reveal the main stages and areas of the activity at Solovki. Solovki as a multi-subject object of cultural and natural heritage in the Arctic is a rather complex topic for comprehensive study. Culturology, archeology, history, geography, botany (flora), philosophy, politics, religious studies, orthodoxy, the study of the Pomors and their life, strategic management, tourism — all these branches of the scientific knowledge and key concepts are directly related to Solovki. The task of this article does not include a review of the immense literature on scientific disciplines that explore Solovki past and present life. It seems possible to note only some of the publications that are available in my personal library, as well as Internet resources available to me and many other readers. Thus, the references and the sources will be specified further in process of handling of some topic directly in the text, naturally, with corresponding notes.

Centuries-long life of Solovki, multifaceted and closely connected with many pages of the Russian history and culture, was reflected in fiction, cinema, and television. The attempts to show objectively the cultural and historical heritage of Solovki are made in the development of products about the Arctic tourism, the release of a variety of tourist guides, map-schemes, photo albums, advertising booklets, organization of the tourist routes. But even in them, as in other highly specialized scientific works, it is not always possible to give a full review of the centuries-long history of Solovki, which is quite understandable, bearing in mind the mission and the purpose of

such publications. I want to say in addition that the Internet portals of the Solovetsky reserve museum (URL: <http://www.solovky.ru/>) and the Solovetsky Monastery (URL: <http://solovki-monastyr.ru/>) deserve the attention and public recognition. In fact, they chronicle not only the history and culture of the past, but also modern life in Solovki in the XXI century A.D.

The ancient development of the Solovetsky Islands

Solovetsky Islands (Pomor: Solovki, Karelian: *Solokka* from the Saami *Suollek* "islands") is an archipelago, geographically located in the White Sea, consisting of 6 large islands: Bolshoy Solovetsky, Anzer, Bolshaya Muksalma, Malaya Muksalma, Bolshoy Zayatsky, Maly Zayatsky, and more than 100 small islands. The ancient development of Solovetsky Islands in the White Sea started at the turn of the Mesolithic and Neolithic epochs in the middle of the V millennium BC. On the islands of the White Sea, by joint efforts of researchers of different generations (N.N. Vinogradov, A.A. Kuratov, A.Ya. Martynov, etc.) by 2010, more than 70 primitive sites, workshops and locations, including 58 of them at Solovki were explored, about 30 stone labyrinths were found (2 — at Kuzovy, the rest 28 — at Solovetsky archipelago) and more than 2,000 embankments and "symbolic" stone layings of different time and purpose. [1, Martynov A.Ya., p. 21].

The oldest island sites of Solovetsky Islands were seasonal, summer by character. Their inhabitants obtained food for themselves by hunting for the island and sea animals and poultry, fishing without using nets, gathering (edible grasses, roots, berries, mollusks), possessed various methods of processing local and imported stone, and went by sea. Well-known monuments of ancient cultures are the White Sea and Onega petroglyphs (carvings or drawings on the rock, from the Greek "petros" — stone and "glyph" — carving). There are more than 2,000 separate figures, images of people and animals, rowers in boats, skiers, scenes for hunting elks, deer, battles and ritual processions (Zalavruga, Erpin Pudas, Besovy sledki). The discovery of Solovetsky archipelago and the "travel by sea" from the western coast (from the lower reaches of Kemj) through Kuzova is dated back to the V millennium BC.



Figure 1. Ancient people hunting for beluga from the boat in the White Sea.
URL: <http://petroglyphs.ru/photo/belomor/img/14pic-1.jpg>

Geographical location and nature, historical and statistical description of Solovetsky Islands were given already in the writings of Archimandrite Dositheus in 1833, 1853, and then in the History of the First Class Stauropegial Solovetsky Monastery (1899). In the mentioned history it was noted that "the climate near the White Sea is severe, the northern soil is inefficient; and therefore almost five centuries ago Solovetsky islands were completely uninhabited, and the entire White Sea coast is not widely populated. Among the tribes that lived near the White Sea, Izhora (Karelians), Chud, Lapps, Kayanes, Murmans, and also Zyrians and Samoyeds are mentioned in the ancient written monuments [2, pp. 7–8].

Spaso-Preobrazhensky Solovetsky Stauropegial Monastery

Spaso-Preobrazhensky Solovetsky Stavropegial Monastery of the Russian Orthodox Church (ROC) had been functioning at Solovetsky Islands during the XV–XXI centuries. It is one of the northernmost monastic monasteries in the Far North, in the Arctic, known and revered in Russia, the largest spiritual and cultural center, the Russian Golgotha.

The harbinger of the Solovetsky Monastery was hermitage in the late 1920s and early 1930s. XV century. The hermit German, who lived before in the chapel on the Vyg river, and Savvaty with his experience of monastic life in Kirillo-Belozersky and Valaam monasteries met and carried a joint feat of hermit at Solovki, but later for various reasons they one by one left the island. Savvaty died in 1435 and was buried in the chapel on the Vyg River. After the meeting with the monk Zosima German settled with him at Solovki, and they put the beginning of the Solovetsky monastery in 1436.

The first hegumen of the Solovetsky monastery were Pavel, Theodosius and Jonah, appointed by the Novgorod Archbishop, and then Zosima. The monastery was at that time in the territory of the independent Novgorod republic, and according to the canonical authority all the clergy were subordinated to the Novgorod archbishop not only in Veliky Novgorod and its suburbs, but also in remote Novgorod areas.

D.S. Likhachev, describing the beginning of the Solovetsky Monastery, noted: "It is very characteristic and to some extent symbolic that the end of the XV century, or rather, its last quarter, was the time of the decline of Novgorod's independence and at the same time the greatest territorial expansion of the monastery in the White Sea region." And further he noted: "The history of Solovki is the history of the entire Russian North — a great country during the XV, XVI, XVII centuries. This country was part of the Moscow state, but inherited the elements of relative independence "[3, p. 12]. The Novgorod Republic actually transferred its organizing role in

the North to the Solovetsky Monastery, after its bloody crushing defeat by the army of the Moscow Tsar Ivan III in 1478.



Figure 2. Reverend Zosima, Savvaty and German

The Orthodox monasteries of the North, especially the large ones, were almost always polyfunctional. A small wooden monastery on Solovki gradually increased its land holdings, acquired farming, developed trade, and actively conducted stone construction.

During governing of Philip, secular name — Fedor Stepanovich Kolychev (1507–1569), hegumen of the Solovetsky Monastery in 1548–1566, Metropolitan of Moscow and All Russia in 1566–1568, openly opposed the oprichnina and the policy of Ivan the Terrible, the central stone temple complex was built: the Assumption Church with the Refectory and the Cellarer Chamber (1552–1557), and the main temple of the monastery, an outstanding monument of medieval architecture — Spaso-Preobrazhensky Cathedral (1558–1566). In the days of hegumen Jacob in 1582–1596, under the guidance of the "city craftsman" from Vologda Ivan Mikhailov and the monk of the Solovetsky monastery Trifon (Kologrivov), from the pomor village Nenoksa, Solovetskaya fortress was built with 8 towers and 10 gates of untouched boulders of enormous size, which allowed more than once (1571, 1582, 1611, 1854) to successfully repel attacks of invaders.



Figure 3. Metropolitan of Moscow and All Russia Philip.

During 1596–1601 the Annunciation Church was built, in 1668 — a stone church in the name of St. Philip; in 1776–1777 — three-storeyed bell tower. In 1856–1860 the Holy Trinity Cathedral was built with two chapels in the name of the prince Alexander Nevsky and the Monks Zosima and Savvati, where there were palls with their holy relics. A small stone church in the name of the monk German appeared in 1859 in the basement of the Trinity Cathedral, where the relics of the Reverend German were kept.

The residential and economic construction was also arranged at the territory of the monastery. Workshops, crafts, berths, the best harbor in the north, dams, canals, hayfields, vegetable gardens and greenhouses, the biostation, the hydroelectric power station — all this,

amazed by the originality of the idea, coherence and goodness, was the result of the selfless work of several generations of monks and workers (artisans and peasants). 270 people lived in the monastery during 1584–1594. 350 people and about 600 working people in 1649. In 1621 in Solovetskaya fortress there were 1,040 military people on the maintenance of the monastery.

The Solovetsky Monastery was one of the most revered in Russia. In the monastery canons there are more than 50 names of devotees of piety who committed their spiritual feat on Solovki. Two patriarchs came out of the Solovki monks: Iosaph I (1634–1641) and Nikon (1652–1658), 6 metropolitans, several archbishops and bishops, many ascetics famous for their holiness and miracles, as well as prominent historical figures Avraamy Palitsyn, Alexander Bulatnikov and others.

The foundation, renewal and existence of 7 northern monasteries are connected with the Solovetsky monastery, in its jurisdiction there were up to 30 parish churches. By the beginning of XX century the monastery had 10 priories and ashrams, 17 temples (31 thrones), about 30 chapels [4, A.A. Soshina, p. 12, 17]. Thousands of pilgrims visited the monastery every year for worship, comfort and instruction, received spiritual help.

The Solovetsky monastery was not only the spiritual, but also the major cultural center of the Russian North. Its role was not limited by the military defense of the northern territories, the spread of improved forms of management, technical process and the involvement of the inhabitants of the North to a higher order of society. The monastery developed architecture, icon painting and applied arts, was the collector and custodian of the ancient Russian manuscript heritage, works of painting and art crafts. The monastery possessed one of the best libraries in those days, was the place of creation of books, annals. “The Legend of the Creation of Life of Zosima and Savvaty” and others, the works of Archimandrite Dosifei (Nemchinov) (1780–1845): The Chronicler of Solovetsky (Moscow, 1833); topographical and historical description of the steatopygic first-class the Solovetsky monastery (Moscow, 1834); geographical, historical and statistical description ... of the Solovetsky Monastery (Moscow, 1836), etc.

The architecture of the Solovetsky Monastery, its place in the history of the Russian culture, the evolution of the image, Solovetsky Icon Collection, Solovetsky Library are described in detail by D.S. Likhachev, O.D. Savitskaya, S.V. Veresh, M.I. Milchik, L.A. Kologrivova, E.S. Ovchinnikova, N.N. Rozov [3, pp. 9–338]. At the same time, if the remains of Solovki icons have to be searched in museums, and some of them are irretrievably lost, whereas more than 1,500 books survived from the monastery library by 1980, including 1,482 volumes in the State Public Library named after M.E. Saltykov-Shchedrin [3, Rozov NN, p. 311].

Solovky uprising

In 1668–1676 the Solovetsky monastery became one of the strongholds of the religious dissent. Using the removal of the rank of patriarch Nikon, monks, novices, monastic workers and outsiders acted "for the old faith", against his church reform. The monastery was "locked up" and refused to let the riflemen enter the fortress, who arrived at Solovki on June 22, 1668. The monastery was able to withstand more than 7-year siege. By 1674 up to 1,000 riflemen, led by the Tsar's voevoda I. Mescherinov, and a large number of guns were concentrated under the walls of the monastery. The betrayal of the monk Feoktist, who pointed out to the riflemen the unprotected window of the White Tower, hastened the defeat of the besieged in January 1676. The uprising was suppressed with incredible cruelty: only 60 out of 500 of the participants survived after the capture of the fortress. All of them, with the exception of a few people, were later executed. [5, Autocratova M.I., p. 355].

The Solovetsky administrative-patrimonial district of Pomorie

The archimandrites of the Solovetsky Monastery (hegumen until the XVIII century) were appointed directly by the tsar and the patriarch and were independent of the local church and secular authorities. In the opinion of Academician D.S. Likhachev (1906–1999), monastery secluded among the White Sea on a desert island, chosen for monastic life, it nevertheless spread its secular —military, feudal and economic power to a vast space.

In the XVI and XVII centuries the Solovetsky Monastery held the defense of the entire Russian North, from the Murmansk coast and to Western Karelia, all the Pomorie. The monastery was not only a fortress, but also that "administrative center from which the general direction of defensive preparations proceeded, and in case of attack by military actions" [6, Likhachev D.S., pp. 27–41]. Solovetsky administrative-patrimonial district had a special status of management of all Pomor areas, performing in fact the functions of the Russian state, which delegated to the monastery the most important powers at the end of the XVI century to collect taxes, duties, to arrange security in the White Sea.

"According to the letter of 1592, the fact of allocation of Solovetsky possessions as a special administrative-territorial unit should be considered as another large concession to the monastery" emphasized Professor G.G. Frumenkov. [7, p. 31]

The official document legitimated the existence within the centralized Russian state of a peculiar state-monastery with its territory, army, court, prisons, postal communication, its management and financial and taxation apparatus, which was entrusted with collection of state taxes and duties.

Table 1

Delegation of the functions of state administration of the Solovetsky monastery

<u>Date and name of the letters</u>	<u>State</u>	<u>The Solovetsky monastery</u> <u>[8, Lukin Yu.F., p.74]</u>
June 19, 1591. Customs letter to the Solovetsky Monastery on the collection of trade duties in Pomor areas. Acts of the archeographic expedition (AAE), vol. 1. St. Petersburg, 1836. № 352.	transferred to the monastery its functions — the right to collect money taxes (tamgas), dues for goods presented at customs, collection of fish tithes, monetary fines (reserve money) in Pomor areas, which together with tribute were then brought to Moscow.	received the permission to collect customs duties, the tax, monetary gathering from visitors of trading people and peasants of Kem, Sumskaya and other Pomor areas. And leave the quarter of the Varguzsky area of customs and tenth duty, as the monastery pays for to Moscow in full.
<i>June 1591. The paternal letter to the Solovetsky Monastery "to Kem and other Pomor areas."</i> AAE, vol. 1. No. 353.	1) awarded Kem and other areas to the monastery. 2) delegated the function of strengthening the defense in Kem area: "Make every fortress, and make a jail, and riflemen from the monastery here to arrange" 3) to collect duties, taxes and "to give 134 rubles and 24 three-copeck-pieces for all our incomes annually" into tsar treasury.	1) Kem volost, Pudozhemskaya, Pebozero and Maslozeroo entered the patrimony of the monastery with all the peasants, saltpans, fishing and hunting, with forests and reeds, sea hauls and lakes, and with all sorts of lands. 2) obligations for the construction of the Kem prison, protection from attacks of the Swedes. 3) legitimization of the right to collect duties from volosts, taxes and other financial charges.
April 1592. The Tsar's letter to the Solovetsky Monastery on granting a five-year privilege in taxes to Pomor volosts and other establishments, and lands, the duty-free sale of monastic salt in Vologda and annual purchase in Ustyug of up to 6,000 quarters of bread without paying customs duties. AAE, vol. 1. No. 355.	1) established five-year privilege in which "not to collect from monastic patrimony of tribute and taxes in Pomorie." 2) determined the sources of income for financing from the monastery treasury the costs of maintaining military people, the organization of defense in the monastery and in 2 jails of Kem and Sumy; and ordered "not to come there for collectors of taxes."	1) during privileged years, the state did not order to collect tribute and taxes from the monastic patrimonies in Pomorie. 2) is released from payment of duties, tamga for passage on the Dvina, on Ustyug, on Totma, Vaga on Vologda 3) is released from payment of duties, tamga from the sale of salt in Vologda and the purchase of bread in Vologda and Ustyug. 4) to maintain military people in the monastery, in Kem and Sum jails, the passage of messengers and envoys.

The state continued to grant privileges to the monastery, relief in taxes, to grant lands and various areas in the subsequent time. But the monastery permanently had the function of defense from the Swedish-Danish expansion to the Russian North. Tsar Mikhail Fedorovich (the years of the reign: 1613–1645) granted the Shuya Korelskaya volost to the monastery with lands and peasants, released monastic patrimonies from payment of government fees, hundred-ruble dues from 100,000 rubles of salt sale, confirmed the jurisdiction of the monastic possessions, except for criminal cases to hegumen of the Solovetsky Monastery only. [2, pp. 74–75].

The charter of Tsar Alexei Mikhailovich (1645–1676) of March 30, 1649 established the duty for 130,000 poods of salt from 3,900 rubles to 658 rubles, every tax from patrimony and crafts was cancelled [2, pp. 87–88]. After the end of Solovetsky Troubles of 1657–1676 the tsar's disgrace of the monastery was cancelled, and the monastery again took the possession of its estates. The main source of monastery income has always been pomor saltpans. If at the beginning of the second half of the XVI century the monastery sold in Vologda and in other places 6,000 poods of salt from its saltpans, then in the XVII century already 130 000 poods, paying for this the duty of 658 rubles. At the same time the monastery also saved money, which it used for help to the state during difficult times. "In total, during its existence, the monastery gave according to V. Vereshchagin calculations, more than 100,000 rubles in silver, to the treasure" [7, Frumenkov G.G., p. 58].

The Solovetsky Monastery actively participated in the political life, defending the northern borders of Russia. Anthony, hegumen of the Solovetsky Monastery in 1605–1612, in his message on March 12, 1611 rejected the claims of the Swedish King Charles IX on the election of his son to the Russian king, who wanted to attract the Solovetsky monastery to his side for this purpose. Since 1637 the entire military power was concentrated in hands of Solovetsky hegumen, in connection with the recall to Moscow of Solovki voivodes, all affairs, fortress keys and military shells were transferred to the hegumen. The military significance of the Solovetsky Monastery was revived during the Northern War of 1700–1721. Tsar Peter I personally visited Solovki in June 1694 on the yacht "St. Peter". He committed the secondary visit to the islands in 1702 as the head of a squadron of 13 warships and 5 battalions of the guards.

The wooden one-headed church was built at Bolshoy Zayatsky Island in memory of Andrew the First-called, the patron of sailors. On the way back, Peter I with two frigates "Courier" and "Holy Spirit" and 5 squadrons of guards departed from the monastery village of Nyuhcha on the seashore through the impenetrable the White Sea-Onega jungle on the so-called "sovereign road" laid by monastic peasants (160 versts) to Povenets, Onega Lake, then to the river Svir, where 2 frigates entered Ladoga Lake, where the guardsmen defeated the Swedish flotilla and took the fortresses of Nothenburg and Nienschanz. St. Petersburg was founded at the mouth of the river Neva in 1703.

The status of the Solovetsky Monastery changed radically in the second half of the XVIII century. The Solovetsky Monastery lost its possessions in 1764, received the status of a stauropegic monastery and began to receive an annual state maintenance of 2 017 rubles 50 copecks. The long process of secularization of the church lands ended by the statement of

Catherine II in that year, with the transfer of the clergy to a full state monetary allowance with compulsory seizure of landed property. The monastery only kept the function of the spiritual mansion of the monks, who were dedicated to prayer and contemplation of God, which, however, did not prevent them from withstanding the attack of the English squadron already in the following XIX century during the Crimean War of 1853–1856.

The Solovetsky Monastery was temporarily closed for 1920–1990. The process of liquidation of the Solovetsky Monastery went gradually from 1920 till spring of 1923. The Commission of Arkhangelsk Regional Revolutionary Committee under the leadership of M.S. Kedrov, on April 29 – May 1, 1920 produced seizure of food surpluses, weapons, money, valuables of the monastery. The lands of the archipelago were signed away to "Solovki" collective farm (organized in summer of 1920) with the subordination to people's commissariat of agriculture. Part of the monks under worldly names worked in the collective farm. Shrines and relics, books, icons, church plates were taken out and scattered across various museums and libraries, considerable part of them was lost. The monastery considered to be valid until the decision of the Arkhangelsk regional Executive Committee of July 21, 1923, to liquidate the churches of the Solovetsky Monastery and to transfer their property through the NKVD to the administration of the northern camps. In the days of SSPC (Solovetsky Special Purpose Camp), the hallows of Zosima, Savvaty and German were opened in 1925 and kept in the camp museum until 1939, and then were shipped to Moscow.

In accordance with the Decree of the Holy Synod of the Russian Orthodox Church dated October 25, 1990, the Solovetsky Monastery was reopened. Earlier, in 1988, the parish community was formed, the so-called "twenty", it was registered on April 14, 1989. The first inhabitants of the revived monastery arrived on October 16, 1990.

By the Decree of His Holiness Alexis II Patriarch of Moscow and All Russia on January 28, 1992 hegumen Joseph (I.A. Bratishchev) was appointed as the vice-rector of the monastery. In August 1992, the Patriarch of Moscow and All Russia Alexis II visited Solovki, the hallows of German, Savvaty and Zosima were transferred from St. Petersburg¹. In 1992, the administration of the Arkhangelsk Region transferred 40 monuments of history and culture located on the Solovetsky Archipelago to the restored the Solovetsky Monastery, for the gratuitous perpetual use.

¹ Federal'noe gosudarstvennoe biudzhethnoe uchrezhdenie kul'tury «Solovetskii gosudarstvennyi istoriko-arkhitekturnyi i prirodnyi muzei zapovednik. URL: <http://www.solovky.ru/> (Accessed: 25 November 2016).

The prison of the Solovetsky Monastery

During XVI–XIX centuries it was a secret state dungeon, one of the most ancient, with the strictest regime. Since the end of the XVI century it is the place of exile for opponents of the autocracy and official Orthodoxy. Among them are the famous non-possessor Artemy Troitsky (the essence of the Nonpossessory movement was the predominance of spiritual and moral motives of life behavior over material interests), who fled from prison on Solovki to Lithuania; Tatar Tsarevich in the Russian service Simeon Bekbulatovich; the author of the famous "Tale of the Glorious Time" Avraamy Palitsyn; supporters of Peter I — Count P.A. Tolstoy, Prince V.L. Dolgoruky; the last ataman of Zaporozhskaya Sich P.I. Kalnishevsky; diplomat P.I. Musin-Pushkin; P.I. Hannibal, and others. In 1903 the Russian government transferred the prison buildings to the monastery, the hospital with a church was set up in the former prison.

The Solovetsky Special Purpose Camp

The SSPC was on Solovki in 1923–1937, was transformed into a special purpose prison (SPPP) in 1937–1939. The structure of the Solovetsky prisons and the location of individual units in 1923–1929 included 6 branches, Kemsky transit point, the punishment cell for women at Zayatsky Islands.

Prisoners were divided into 15 groups. The number of prisoners at Solovki was: on September 20, 1923 — 3,049 people; on October 1, 1927 on Solovki — 7445 people, on the mainland — 5451 people.

15–19 thousand prisoners were at the Islands during 1928–1930. On March 1, 1930, there were 15,834 prisoners on Solovki, and in total 57,325 people were kept at Solovki and at the mainland. The exact number of prisoners who passed through Solovki during the SSPC is difficult to determine, because all had different terms of imprisonment, prisoners were constantly transferred from the islands to the mainland and back, someone got shortened term, someone — increased. M. Rozanov mentioned the number — 83 000 people. Bearing in mind that his data for years almost coincide with the known official data, this figure, perhaps, according to A.A. Soshina, the author of the monograph "At Solovki against will: fate and timing. 1923–1939 ", is not very far from the truth [9, pp. 196–199].

All prisoners, regardless of gender, age, nationality and religion, were divided into 3 groups:

- 1) "Politicians", i.e. political prisoners, members of parties (Socialist-Revolutionaries, Mensheviks, Anarchists, Mussavatists, Bund).
- 2) The "CRs" — counter revolutionists convicted as per articles 58 and 66 of the Criminal Code: tsarist military and civil officials, clergy of various faiths, people of intelligent

professions, former students, nobles and bourgeoisie, workers and peasants who participated in mass anti-Bolshevik movements, foreign subjects, dispossessed peasants, who were regarded as "village counter-revolution."

- 3) "street gangs" — criminals and "bytoviki", prostitutes, professional beggars, street children.

The prisoners worked at Solovki, in Karelia, on the construction of the northern section of the White Sea-Baltic waterway, at Vaigach island, in Ukhta. The development of the North is transformed into its colonization by the forces of Gulag. In 1930, the SSPC was reorganized into the Solovetsky and Karelo-Murmansk correctional labor camps, Solovki became one of its 12 branches — the fourth, and all six branches at the archipelago were renamed into camps.

In autumn of 1931, the White Sea-Baltic Correctional Labor Camp was established for the construction of the canal on the basis of the Solovetsky and Karelian-Murmansk camps. In 1934 Solovki became the VIII branch of the White Sea-Baltic Canal. On February 20, 1937 the Solovki branch of the WSB Gulag was reorganized into the Solovetsky Special Purpose Prison (SSPP) with the extremely harsh regime. In 1937 special NKVD troika of the Leningrad region sentenced to death 1,825 prisoners of the Solovetsky prison, and 1,820 were shot. After mass shootings, the prison regime in Solovki became even tougher. SSPP was closed on November 2, 1939, the islands were signed away to the Northern Fleet Training Unit.

Tens of thousands prisoners passed through the islands and camps at Solovki for 16 years of existence, among them are representatives of well-known noble families and intellectuals, large scientists of various branches of knowledge, military, peasants, writers, artists, poets: D.S. Likhachev, P.A. Florensky, O.V. Volkov, L.V. Kurchevsky, A.I. Filimonov, I.M. Andreevsky, Prince Nikolai Golitsyn, Baron Nikolai Stromberg, A.A. Meyer, T.N. Gippius, P.K. Kazarinov, A.A. Evnevich, G.M. Osorgin and others.

The names of more than 80 metropolitans, archbishops and bishops, more than 400 hieromonks and parish priests are famous, all of them were prisoners of Solovki. About 60 of them were glorified for general church veneration in the face of the holy new martyrs and confessors of Russia. Among them are the martyrs Eugene (Zernov), Metropolitan Gorkovsky († 1937); Hilarion (Troitsky), Archbishop Vereysky († 1929); Petr (Zverev), Archbishop of Voronezh († 1929); Procopius (Titov), Archbishop of Odessa and Kherson († 1937); Martyr John Popov, professor of Moscow Theological Academy († 1938), etc.².

² Vospominaniia solovetskikh uzbekov. Tom I 1923–1927. Izdatel'skii otdel Solovetskogo monastyrnia, 2013. 774 s. Vospominaniia solovetskikh uzbekov. Tom II 1925–1928. 2014. 640 s. Vospominaniia solovetskikh uzbekov. Tom III 1925–1930. 2015. Vospominaniia solovetskikh uzbekov. Tom IV 1925–1931. URL: <http://solovki-monastyr.ru/VSU/>

People escaped from prisons, exile and camps at all times and in all countries. There is no exception for SSPC — SPPP. There are no known breaks with a happy end from the Solovki, in contrast to the escapes from continental business trips to Finland and other countries. Once abroad, former prisoners published their memories: A.S. Malsagov. "Hell's Island" (England, 1926); A. Klinger "Hard works at Solovky. Notes of escaped "(Berlin, 1928); General I.M. Zaitsev "Solovki, Communist hard works or the place of torture and death" (China, 1931); I.L Solonevich "Russia in a concentration camp" (1938), B.L. Solonevich "The Secret of Solovki" (Brussels, 1942), etc.

Training squad of the Northern Fleet

Since 1939–1940 there were following organizations at Solovetsky Islands: the administration of the commandant of the Solovetsky garrison of the Northern Fleet (NF), the training squad of the NF, the joint school of the training squad of the NF, the Solovetsky military port of the NF, "1 separate disciplinary company of the NF", etc. The Solovetsky school of the shipboys in 1942–1945 trained 4,111 first-class specialists for all the fleets and flotillas of the Soviet Union: helmsmen, radio operators, signalers, torpedomen, motorists, boatswains, electricians. Among them are: V. Pikul, B. Shtokolov, V. Moiseenko, V. Korobov, Yu. Padorin, N. Usenko, etc. One in every four shipboys died, they fought in the Northern, Baltic, Black Sea and Pacific fleets, on board of vessels of the Amur, Danube, Caspian, Dnieper and Volga flotillas. The withdrawal of the military unit from the territory of Solovki was completed in 1991. The monuments that were on the balance of the military unit were signed away to the Solovetsky Museum-Reserve. according to the acts.

Solovetsky state historical-architectural and natural museum-reserve

The Council of Ministers of the RSFSR issued the order No. 69-p on January 10, 1967, on the basis of which the Solovetsky Historical and Architectural Museum-Reserve was established, the branch of the Arkhangelsk Regional Museum of Local History, its status was subsequently changed several times. The following persons worked as the directors of the museum at different times: S.V. Veresh — 1967; N.P. Varakin (1967–1969); L.V. Lopatkina (Shilova) (1969–1973, 1974–1979, 1989–1992); A.A. Shmelev (1979–1981); L.E. Vostryakov (1981–1989); O.N. Nifontov (1992–1994), A.Ya. Martynov (1994–1998), T.L. Fokina (1998–2000); M.V. Lopatkin (2000–2006, 2007–2009), since November 19, 2009 V.V. Shutov — at the same time rector of the Solovetsky Monastery, Archimandrite Porfiry³.

³ Spaso-Preobrazhenskii Solovetskii stavropigial'nyi muzhskoi monastyr' RPTs (Moskovskii patriarkhat). URL: <http://solovki-monastyr.ru/> (Accessed: 25 November 2016).

By the invitation of N.P. Varakin, A.A. Soshina has been working since her student days at the Solovetsky Museum (February 2, 1948 – August 4, 2013), Solovki did not let go until the last days



Figure 4. Soshina A.A.

of her life. She worked as a research assistant, head of the department, the main curator of the museum's funds. Together with her colleagues, they traveled almost all the former possessions of the Solovetsky Monastery, built a collection of objects of the traditional handicrafts and households, made up a card-catalogue for the items which were taken to other museums. Later, Antonina Soshina worked in the Church and Archaeological Office of the Solovetsky Monastery, was the editor of all publications of the Solovetsky Monastery⁴. She is the author of numerous works on the history of

SSPC, she painstakingly and extensively worked in the state archives. The last book of A.A. Soshina "At Solovki against will: fate and timing of 1923–1939" was published in 2014. In 1988, the documentary director M.Ye. Goldovskaya did a movie at Solovky, the famous film "Solovetskaya Power". In 1989 the museum opened a permanent exhibition "Solovetsky Special Purpose Camp", the first exhibition in the USSR on GULAG (A.A. Soshina, A.V. Melnik, A.V. Bazhenov, Y.A. Brodsky)⁵.

Today SSHANMR is one of the largest institutions of similar profile in Russia. The operational management of the Solovetsky Museum includes more than 1,000 objects of cultural heritage in chronological boundaries from V millennium BC until the XX century. The museum is a particularly valuable object of the cultural heritage of the peoples of the Russian Federation. The historical and cultural ensemble of Solovetsky Islands is included in the list of the World Cultural and Natural Heritage of UNESCO (1992)

The Solovetsky Forum

There is the following record at the web site of the Solovetsky Museum-Reserve dated in 1989, from its history for 1975–1998: "The first Solovetsky Forum was held at Solovky with the assistance of the Solovetsky Museum-Reserve (initiator — Yu.F. Lukin, pro-rector of the Arkhangelsk State Pedagogical University named after M.V. Lomonosov), the forum was dedicated to the problems of de-Stalinization of culture, science, public life"⁶.

⁴ Pamiati Antoniny Soshinoi. URL: <http://www.cogita.ru/pamyat/in-memorium/pamyati-antoniny-soshinoi> (Accessed: 25 November 2016).

⁵ Istoriia muzeia: 1975–1998 gg. URL: <http://www.solovky.ru/reserve/history/1975–1998.shtml> (Accessed: 25 November 2016).

⁶ Ibid

On July 12–17, 1989, the first Solovetsky forum was really held, the co-chairman and the active organizer of which was, apart from me, P.I. Sidorov. Participants of the first forum on behalf of the "Memorial" society were greeted with the telegram of A.D. Sakharov and Yu.N. Afanasyev: "We welcome the participants of the scientific and practical conference devoted to the problems and prospects of de-Stalinization of consciousness — the key issue of restructuring and democratization in our country" [10, pp. 63–64].

Two problems were discussed at the round table at Solovki in 1989: the perpetuation of the memory of victims of the repressions of 1923–1939 and the identification of ways of mutual work with the Leningrad and Moscow offices of the "Memorial". The idea of a granite boulder as a monument to victims of political repressions was born for the first time in Solovki in 1989. The conversation about this came into the discussion when, on the way from Sekirnaya Gora to the monastery, by foot, L.A. Ponomarev, a member of the board of "Memorial", jpgYu.F. Lukin, co-chairman of JSC "Conscience" ("Sovest") of the Arkhangelsk branch of "Memorial", V.S. Sadkov, a member of the board of JSC "Conscience".



Figure 5. Solovetsky stone in Moscow
URL: <http://liveinmsk.ru/up/photos/album/1eastone/8872>

This creative idea was then realized with the participation of many people and organizations. As a result, the Solovetsky stone was erected in Moscow on Lubyanka (October 30, 1990) and in Arkhangelsk (October 31, 1992) — a boulder monument delivered directly from Solovki, dedicated to the memory of the victims of political repressions "To Prisoners of Gulag" [11, Butorin M.V, p. 29, 47].

Solovetsky stone is not an artificial monument, it is not made as ordinary sculptures. However, it is really difficult to compare its strength of the spiritual and emotional impact with any other monument. This is a real humanized natural and spiritual artifact that survived with the

prisoners at Solovki for the tragic years. This was the symbolic design of this monument. Since then, similar monuments have appeared in other cities of Russia and in the world.

More than 100 scientists and teachers from the universities of Arkhangelsk, Vologda, Moscow, St. Petersburg, Syktyvkar, Petrozavodsk, Tobolsk, Kursk, Yakutsk and other Russian cities took part in the work of the III Solovetsky Forum "Solovki in the Past, Present and Future" in May 1991. Worried about the fate of the Solovetsky Islands, they adopted the appeal to the authorities and called for the coexistence of the monastery — a shrine of the Russian Orthodox Church and the Solovetsky complex of historical and cultural monuments of national and world significance at the Solovetsky Islands. This appeal stressed that the coexistence of the monastery and the museum is not only possible, but absolutely necessary for a genuine revival of Solovetsky archipelago.

The Solovetsky Islands are a sacred place where the material and spiritual sides of human destinies meet in close interweaving [10, Lavrentyeva A.Yu., p. 65]. 16 Solovetsky forums in total took place in 1989–2013 on various actual problems. Solovetsky Forum held various actions to strengthen cooperation and trust between people; established scientific and cultural ties with the public in Russia and in other countries; drew the attention to the actual complex problems of culture, medicine, education, history, ecology in close connection with the political realities of the modern world; contributed to the spiritual revival of Russia, the preservation of the historical memory, the natural and cultural environment of Solovki.

Local government in Solovki

On February 12, 1944, the Council of Working People's Deputies was established at Bolshoy Solovetsky Island. At a village gathering, the residents of the village voted to give their settlement the name "Solovki" on January 19, 1987. Solovetsky district in the Arkhangelsk region was formed by the Decree of the Presidium of the Supreme Soviet of the RSFSR on March 23, 1987, with the center of the district — the settlement Solovetsky. In 2004 the Solovetsky District was granted the status of a municipal district. Since January 1, 2006 — this is the municipal formation "Settlement Solovetsky" of the Primorsky Municipal District. The Solovetsky Islands are the part of the terrestrial territories of the Arctic zone of the Russian Federation (2014). The population in 1989 was 1303 people, in 2002 — 955 people, in 2014 — 898 people.

There are following organizations at Solovki: The Solovetsky Monastery, the Solovetsky Museum, the Solovetsky secondary school, kindergarten, police department, branch "Solovetsky" of JSC "ArhoblEnergo", hydrometeorological station; forestry; Airport "Solovki"; offices of the "Post of Russia", JSC "Rostelecom", Sberbank; scientific research and design-production

cooperative "Chamber"; MUE "Solovki-Service", hotels and other organizations. About 35 thousand pilgrims and tourists visit Solovky annually.

In 2015 the Government of the Arkhangelsk region approved the Development Strategy for the Solovetsky Archipelago as a unique object of the spiritual, historical, cultural and natural heritage, as well as the Plan for implementing of the state program "Infrastructure Development of the Solovetsky Archipelago of the Arkhangelsk Region for 2014–2019." The Council of the Municipality "Solovetskoye" adopted in December 2015 the general plan for the entire the Solovetsky archipelago, where Solovetsky, Savvatyevo, Rebalda and Malaya Muksalma settlements are located. The general plan provides for the preservation of the settlement Savvatievo, the dedeterminating of the boundaries of its territory — the Savvatievsky cell of the Solovetsky Monastery. Rebalda and Malaya Muksalma are abolished – these are the production sites of the Arkhangelsk Algal Plant. 17 plots of land from the forest fund will receive the status of the religious and historical places and will be signed away to the monastery. The plan limits the anthropogenic pressure on the archipelago, rigidly regulating the number of places in the rooms of Solovki hotels — not more than 550.

The Association of the Northern Sea Navigation – the private museum at Solovki

The Association of the Northern sea navigation (ANSN) is a non-commercial public organization created in 1999, including people from various fields of activity from Solovki, Arkhangelsk, Onega, Moscow and St. Petersburg. Since 2002 ANSN has been publishing the yearbook "Solovetskoe more". The Solovetsky Maritime Museum, which was opened with the blessing of the governor of the Solovetsky Monastery, Archimandrite Joseph (Bratishchev), functions at Solovki.

The main exposition "Marine Practice of the Russian North and the Solovetsky Monastery" was established in 2006. The museum has a functioning shipyard where the ship "Saint Peter" was built — the replica of the Tsar's yacht of Peter I. The exhibition "The cross and the lighthouse: navigational signs of the White Sea in XVI — beginning of XX centuries" — got the All-Russian historical and literary award "Alexander Nevsky" in 2012. The Solovetsky Maritime Museum became the best private museum of the Arkhangelsk region in 2013, as recognized by the Arkhangelsk Regional Tourist Association.

Conclusion

In conclusion, it can be noted that only a brief coverage of the main milestones in the development of life on the Solovetsky Islands from the deep antiquity to the present day was presented in this review. The integrated multi-vector approach to the investigation of Solovki

problematics is fully justified and can certainly be used in the analysis and especially synthesis of the information, sources, literature on outstanding monuments of cultural and historical heritage in the Arctic. However, it should be clearly understood that, of course, in one article it is impossible to embrace the immense, to use all the opportunities of creative riches accumulated over many centuries on this topic.

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SUMMARY

Authors, abstracts, keywords

ECONOMICS AND POLITICAL SCIENCE, SOCIETY AND CULTURE

Брагин В.И., Мацко Н.А., Харитонов М.Ю. Оценка эффективности освоения месторождений меди и золота Красноярского Севера

Viktor I. Bragin, Natalya A. Matsko, Margarita J. Kharitonova Estimation of efficiency of development of copper and gold deposits of Krasnoyarsk North

Аннотация. В статье изложен вероятностный подход к оценке доступности месторождений полезных ископаемых. Подход специально разработан для начальной стадии оценки ресурсов и запасов низких категорий разведанности. В качестве исходных данных используются наиболее значимые параметры месторождения, которые можно обосновать более или менее объективно — содержание полезных компонентов в руде, объёмы запасов руды, коэффициент вскрыши, способ отработки. Представлены результаты предварительной экономической оценки эффективности освоения прогнозируемых месторождений золота и меди Красноярского Севера. Установлена экономическая целесообразность освоения месторождений золота — Нижнелиткинское, Грозненское, Жильное. Освоение месторождений меди признано нецелесообразным.

Ключевые слова: минерально-сырьевые ресурсы, эффективность добычи, вероятность освоения, медно- и золоторудные месторождения, эффективность добычи, вероятность освоения, медно- и золоторудные месторождения

Abstract. The article presents the probable approach to the assessment of the availability of the mineral deposits. This approach is specially created for initial estimation of resources and reserves of low degree of exploration. As the initial data the most significant parameters of a deposit are used, which can be proved more or less objectively. These parameters are valuable components in ore, volumes of ore reserves, strip ratio, mining technology. The results of preliminary economic estimation of efficiency of development of predicted gold and copper deposits of the Krasnoyarsk North are presented. Economic efficiency of development of investigated gold deposits is established. Development of deposits of copper is considered inefficient.

Keywords: raw material resources, mining operations efficiency, probability of development, copper and gold deposits, gold ore deposits

Егорова Е.Н., Тихонова К.А. Функционирование урбанонимов в лингвокультурном пространстве города (на примере анализа урбанонимов г. Архангельска)

Ekaterina N. Egorova, Kseniya A. Tihonova The function of urbanonyms in language and cultural space of the city (in terms of the analysis of urbanonyms of Arkhangelsk)

Аннотация. В ходе исследования изучена лексическая система урбанонимов, рассмотрены теоретические основы лингвокультурологии, обозначена структура урбанонима, рассмотрены функции и задачи номинации. Был проведён анализ наименований города Архангельска, а на основе составленной базы номинаций выявлены функции урбанонимов. Положение о том, что процесс номинации (создания урбанонима) обусловлен рядом факторов как собственно лингвистического, так и экстралингвистического и лингвокультурного характера, нашло подтверждение. Важнейшим из факторов можно назвать социокультурную ситуацию. С точки

Abstract. The study investigates the lexical system of urbanonyms, the theoretical foundations of cultural linguistics, the structure of urbanonym is designated, the functions and tasks of the nomination are considered. The analysis of the names of the Arkhangelsk was carried out, and functions of urbanonyms are revealed at this database. The statement that the nomination process (creating of urbanonyms) is stipulated by several factors, such as the actual linguistic, extralinguistic and linguocultural ones, was confirmed. The most important factor is the social and cultural situation. In practical terms the results of the study can be used in a high school teaching of

зрения практики результаты исследования могут быть использованы в вузовском преподавании курсов «Лингвокультурология», «Ономастика», в практике проведения лингвокультурологических экспертиз.

Ключевые слова: *урбаноним, лингвокультурное пространство города, типы урбанонимов, Архангельск*

cultural linguistics, onomastics, in practice of linguistic and cultural expertise.

Keywords: *urbanonym, the language and cultural space of the city, the types of urbanonyms, Arkhangelsk*

Матвишин Д. А. Зарубежный и отечественный опыт экономического освоения арктических территорий

Dmitriy A. Matviishin Foreign and domestic experience of economic development of the Arctic territories

Аннотация. В статье рассматриваются ключевые аспекты процесса исследования Арктики. Представлена краткая характеристика Арктического совета, а также стратегических целей, задач, направлений деятельности и используемых для их достижения ресурсов стран-членов и наблюдателей организации. Исследована ресурсная база Арктического региона, проведён анализ экономического освоения Арктики приарктическими государствами, включая характеристики ресурсодобывающих проектов. Отмечены особенности российского и зарубежного подходов к ведению хозяйства в Арктике. В исследовании использовались метод логического анализа, экономико-статистический и исторический методы. Результатом исследования является научное обоснование преимуществ и потенциала отечественного опыта освоения Арктики, а также необходимости своевременной адаптации экономических подходов, инвестиционной политики и законодательства в соответствии с текущими вызовами и тенденциями.

Ключевые слова: *Арктика, история исследования Арктики, Арктические стратегии, ресурсная база, ресурсодобывающие проекты, особенности освоения Арктики*

Abstract. The article deals with the key aspects of the Arctic exploration. There is a brief description of the Arctic Council, as well as strategic goals, objectives, activities and resources used of member countries and observer organizations to achieve these goals. The resource base of the Arctic region is studied. The economic analysis of the Arctic territories by circumpolar states, including the characteristics of resource projects, is arranged. The features of the Russian and foreign approaches to the management of the economy in the Arctic are noted. The method of logical analysis, economic and statistical and historical methods are used in the research. The result is the scientific justification of advantages and potential of domestic experience of development of the Arctic, and also of the necessity of timely adaptation of economic approaches, investment policy and the legislation according to the current challenges and tendencies.

Keywords: *The Arctic, the history of the Arctic exploration, the Arctic strategies, resource base, resource extraction projects, the features of the Arctic development*

Сушко О.П. Особенности динамики цен сельскохозяйственной продукции северных стран

Olga P. Sushko Features of the dynamics of prices for agricultural products of the northern countries

Аннотация. Ценовая динамика на сельскохозяйственную продукцию северных стран определяется множеством факторов. Методы экономико-математического анализа динамики цен на сельскохозяйственную продукцию северных стран позволили выявить тренды, сезонные и циклические процессы. В динамике цен с 1991 г. по настоящий период присутствуют два длительных противоположных

Abstract. Price dynamics for agricultural products of the Nordic countries is determined by many factors. The methods of economic and mathematical analysis of the dynamics of prices for agricultural products of the Nordic countries have allowed to identify trends, seasonal and cyclical processes. The dynamics of prices from 1991 to the present time there are two long opposite trends. Cyclic processes have a duration of 2–4 years. Seasonality in change

тренда. Циклические процессы имеют продолжительность от 2–4 лет. Сезонность в движении цен имеет устойчивый характер в силу естественных биологических процессов под влиянием климатических факторов. Корреляционный анализ ценовых рядов на сельскохозяйственную продукцию северных стран показал связь высокой силы, что подтверждает наличие трендов и периодических составляющих под влиянием общих факторов. Кратковременная аппроксимация динамики цен показывает сохранение возрастающего тренда цен.

Ключевые слова: продовольственная безопасность, экономико-математический анализ динамики цен сельскохозяйственной продукции, противоположные тренды, сезонные и циклические процессы, корреляция временных рядов цен, аппроксимация

of prices is sustainable due to natural biological processes under the influence of climatic factors. Correlation analysis of price series for agricultural products of the Nordic countries has showed connection of high strength, confirming the presence of trends and periodic components under the influence of the common factors. Short-term price dynamics approximation shows the retention of the in-creasing price trend.

Keywords: food security, economic and mathematical analysis of the dynamics of prices of agricultural products, the opposite trends, seasonal and cyclical processes, the correlation of time series of prices, approximation

Федоров П.В. О появлении русского рубежа в Лапландии

Pavel V. Fedorov About the appearance of the Russian border in Lapland (some results of the discussion)

Аннотация. Статья посвящена истории становления границы Российского государства в Лапландии. Автор показывает, что существующие в историографии позиции взаимоисключают друг друга. Решение этого вопроса обнаруживается на другом методологическом основании, связанном с возникновением и падением системы двоеданничества аборигенных жителей — лопарей (саамов). Данный подход иллюстрируется на основе традиционных методов анализа источников, в том числе древних грамот московских и датских правителей из археографического собрания Ю.Н. Щербачева.

Ключевые слова: фронтир, лопари, Россия, Москва, Новгород, Норвегия, Дания, Швеция, демаркация, лапландский вопрос, граница

Abstract. The article deals with the emergence of the Russian state border in Lapland. The author shows that the existing ideas in the historiography negate each other, and offers a solution to this issue on the basis of another method connected with the rise and fall of the system of double tribute of indigenous peoples — the Lapps (Saami). The approach is illustrated on the basis of traditional methods of analysis of sources, including ancient acts of Moscow and Danish rulers from the archaeographic collection of Y.N. Sherbachev.

Keywords: frontier, Lapps, Russia, Moscow, Novgorod, Norway, Denmark, Sweden, demarcation, Lapland problem, border

SINGLE-INDUSTRY CITIES OF THE RUSSIAN ARCTIC

Гладышева И.В. Структурная политика для развития экономики моногородов Арктической зоны Российской Федерации

Irina V. Gladysheva Structural policy for the economic development of single-industry cities of the Arctic zone of the Russian Federation

Аннотация. К обсуждению в научной среде представлены авторские подходы к исследованию вопроса о структурной политике и специфике формирования инфраструктуры моногородов на территории Арктической зоны Российской Федерации. Автором обозначены актуальные проблемы в структуре экономики и отдельных её элементов, выявлены ресурсные ограничения и специфика состояния

Abstract. The author's approaches to the study of the problem of the structural policy and the specifics of the formation of the infrastructure of single-industry cities on the territory of the Russian Arctic are presented for discussion in the scientific community. The author marks urgent problems in the structure of the economy and its individual elements, reveals resource restrictions and specifics of infrastructure state of single-industry cities on

инфраструктуры моногородов на территории Арктической зоны Российской Федерации, обоснована целесообразность формирования новых подходов к построению модели развития экономики моногородов на основе инноваций и учёта индивидуальных территориальных конкурентных преимуществ. Автором использован комплексный анализ структурного развития экономики Арктической зоны.

Ключевые слова: структурная политика, промышленная политика, инфраструктура моногородов, особенности инфраструктуры моногородов Арктической зоны Российской Федерации, ресурсные ограничения, государственное регулирование монопрофильных территорий

the territory of the Russian Arctic. The author proves the expediency of the formation of new approaches to the construction of a model of economic development of single-industry cities based on innovations and individual regional competitive advantages. The author uses a complex analysis of the structural development of the economy of the Arctic zone.

Keywords: structural policy, industrial policy, single-industry city infrastructure, the specifics of the formation of single-industry cities of the Arctic zone of the Russian Federation, resource restrictions, government regulation of single-industry areas

Плисецкий Е.Е., Малицкая Е.А. Специфика государственного и муниципального управления развитием монопрофильных муниципальных образований в Арктической зоне Российской Федерации

Evgeniy E. Plisetskiy, Ekaterina A. Malitskaya The features of state and municipal management of the development of single-industry settlements in the Arctic zone of the Russian Federation

Аннотация. В статье рассмотрена сложившаяся на сегодняшний день система управления развитием монопрофильных муниципальных образований в Арктической зоне РФ, проанализированы применяемые на государственном и муниципальном уровнях инструменты стратегического и программно-целевого управления развитием моногородов, сделаны предложения по совершенствованию системы управления арктическими моногородами, которая должна учитывать как определенную специфику развития каждого такого города, так и быть увязана с проводимой государственной политикой, интересами местных властей, бизнеса и местных сообществ. Методология исследования базируется на использовании поискового, экономико-статистического методов, метода сравнительного анализа. Необходимо сформировать стратегическое видение развития перспективных отраслей (видов экономической деятельности) в моногородах, внедрить программно-целевое управление в системе стратегического управления комплексных инвестиционных планов моногородов, а также разработать концепцию информационной платформы инвестиционных проектов в моногородах.

Abstract. The article considers the current system of management of the development of single-industry settlements in the Arctic zone of the Russian Federation, the tools of strategic and program-target management of the development of single-industry cities are analyzed which are used at the state and municipal levels, the suggestions for improving the system of management of the Arctic cities are made. This system should consider both the specific character of development of each city, and to be linked with the ongoing government policy, the interests of local authorities, business and local communities. The methodology is based on the use of search and economic-statistical methods, method of comparative analysis. The main recommendations are the formation of a strategic vision for the development of promising sectors (types of economic activities) in monotowns, introduction of program-target management in the strategic planning of complex investment plans of monotowns, and elaboration of the concept of the informational platform of investment projects in single-industry cities.

Ключевые слова: монопрофильные города, арктическая зона Российской Федерации, система управления развития моногородами, инструменты государственной поддержки, стратегическое управление

Keywords: single-industry city, the Arctic zone of the Russian Federation, the system of management of the single-industry city development, the tools of state support, strategic management

YAMAL-NENETS AUTONOMOUS DISTRICT

Деттер Г.Ф. Модели освоения ресурсов и территорий Ямало-Ненецкого автономного округа

Gennady F. Detter Models for development of resources and territories of the Yamal-Nenets Autonomous District

Аннотация. Вызовы и угрозы, связанные с обеспечением устойчивого развития Арктической зоны Российской Федерации (АЗРФ), диктуют необходимость изучения фундаментальных закономерностей эволюции и современного состояния структур и процессов пространственного развития АЗРФ, разработку и научное обоснование методологии, методов и практических подходов к формированию альтернативных (инновационных) моделей пространственного эколого-экономического развития прибрежных и континентальных территорий, в том числе градостроительного развития, адаптации существующих методов управления. Исследование проводилось с использованием историко-сравнительного метода, предполагающего выявление общего и особенностей в исторических событиях различных периодов освоения ресурсов и территорий Ямало-Ненецкого автономного округа, также были рассмотрены применяемые в различные исторические периоды экономические модели с точки зрения их влияния на жизнедеятельность населения. В результате исследования выявлена закономерность развития арктических территорий в зависимости от целей их освоения, сформулирован ряд базисных положений для создания новых моделей пространственного развития арктических регионов, с точки зрения инвариантности инновационного пути как условия устойчивого развития АЗРФ.

Ключевые слова: Арктика, Ямало-Ненецкий автономный округ, модели освоения, устойчивое развитие, деградация пространственной структуры, жизнедеятельность населения, прибрежные и континентальные территории

Abstract. Challenges and threats related to the sustainable development of the Arctic zone of the Russian Federation (AZRF) dictate the need to study the fundamental laws of evolution and current state of the structures and processes of spatial development of AZRF, the development and scientific substantiation of methodology, methods and practical approaches to the formation of alternative (innovative) models of spatial ecological and economic development of the coastal and inland territories, including urban development, adaptation of existing methods of management. The study was conducted with use of the historical and comparative method, presupposing identification of common features in historical events in different periods of development of resources and territory of the Yamal-Nenets Autonomous District. Also the economic models were considered which were used in different historical periods in terms of their influence on the life of the population. As a result of the study, a pattern of development of Arctic territories depending on the targets of their development is discovered, the suggestions for the formation of the basic principles of the creation of new models of the spatial development of the Arctic regions are offered, from the point of view of the invariance of the innovative way as condition for sustainable development of the Russian Arctic.

Keywords: The Arctic, the Yamal-Nenets Autonomous District, development models, sustainable development, degradation of the spatial structure, livelihoods of the population, coastal and inland areas

Колесников Р.А., Сухова Е.А. Современное социально-экономическое состояние городов Ямало-Ненецкого автономного округа и пути их инновационного развития

Roman A. Kolesnikov, Ekaterina A. Suhova The current social and economic condition of the cities of the Yamal-Nenets autonomous District and their innovative development

Аннотация. В статье рассмотрены основные проблемы социально-экономического положения городов Ямало-Ненецкого автономного округа, которые в первую очередь связаны с узкой сырьевой специализацией их экономики. Осуществлён поиск инновационных путей развития городов, являющихся ресурсными центрами Арктической зоны Российской Федерации. Авторы обосновывают необходимость перехода от старых концепций индустриального развития к неоиндустриализации. Методологической базой для достижения поставленных в статье целей выступают системный подход и статистические методы анализа.

Ключевые слова: Арктическая зона Российской Федерации, жизнедеятельность населения, социально-экономическое развитие, инновационное развитие, устойчивое развитие, неоиндустриализация, пространственная структура, прибрежные территории

Локтев Р.И., Зуев С.М. Контент-анализ как метод исследования особенностей жизнедеятельности постоянного населения прибрежных населённых пунктов Ямало-Ненецкого автономного округа

Rostislav I. Loktev, Sergey M. Zuev Content analysis as a method to study the features of life of the resident population of coastal settlements of the Yamal-Nenets Autonomous District

Аннотация. В данной статье авторами рассматриваются методические подходы к оценке уровня и качества жизни населения. Анализ научной литературы свидетельствует о том, что в большинстве случаев исследования основываются на первичных статистических данных. Результаты подобных научных изысканий порождают некоторые противоречия, связанные с тем, что при достаточно высоком уровне жизни, определяемым статистическим методом, уровень фактической удовлетворённости жизнью населения в регионе, определяемый иными методами, оценивается ниже. В связи с этим, авторы статьи предлагают наряду с общепринятыми методами оценки уровня и качества жизни населения, а также выявления реальных проблем жизнедеятельности постоянного населения прибрежных территорий в условиях промышленного освоения арктического региона, использовать метод контент-анализа местных информационных агентств.

Ключевые слова: контент-анализ, жизнедеятельность населения, Арктическая зона Российской Федерации, уровень жизни, качество жизни

Abstract. The main problems of the socio-economic situation of the cities of the Yamal-Nenets Autonomous District, which are primarily connected with the narrow raw material specialization of their economy, are considered in the article. The search for innovative ways of development of cities being resource centers of the Arctic zone of the Russian Federation was carried out. The authors substantiate the need to move from the old concepts of industrial development to neoindustrialization. The methodological basis for achieving the goals set in the article are the system approach and statistical methods of analysis.

Keywords: The Arctic zone of the Russian Federation, the livelihoods of the population, social and economic development, innovative development, sustainable development, neoindustrialization, spatial structure, coastal area

Abstract. The authors discuss the methodological approaches to the assessment of the level and quality of life of the population. The analysis of the scientific literature shows that in most cases, such studies are based on the basic statistics. The results of such studies give rise to some controversy related to the fact that at a fairly high standard of living, determined by a statistical method, the actual level of satisfaction of the population in the region, determined by other methods, is estimated lower. In this regard, the authors offer alongside with generally accepted methods of living standards and quality assessment of the population, to use the method of content analysis, which can be also used to identify the real problems of life of the resident population of coastal areas in terms of industrial development of the Arctic region.

Keywords: content analysis, the livelihoods of the population, the Arctic zone of the Russian Federation, standard of living, quality of life

Шафранов-Куцев Г.Ф., Ефимова Г.З. Специфика жизни и педагогической деятельности на Крайнем Севере (на примере Ямало-Ненецкого автономного округа)

Gennady F. Shafranov-Kutsev, Galina Z. Efimova Specifics of life and pedagogical activity in the Far North (in terms of the Yamal-Nenets Autonomous District)

Аннотация. Проживание на территории Крайнего Севера (и приравненных к нему территориях) имеет свою специфику, которая отражается на всех сторонах жизни населения. В статье рассматриваются природно-климатические особенности Заполярья и специфика трудового процесса местных жителей (на примере учителей). Проведён обзор статистики и образовательной политики органов власти Ямало-Ненецкого автономного округа, представлены результаты социологического исследования учителей региона (анкетный опрос). Представлен анализ сроков проживания населения на Крайнем Севере, определена степень социальной укоренённости педагогов, представлена оценка основных факторов, детерминирующих интерес мигрантов к работе в северной школе, и основные мотивы переезда на Крайний Север. Материалы социологического исследования показывают в целом удовлетворительные оценки учительством, условиями и качеством жизни, что позволяет прогнозировать их дальнейшее закрепление на территории ЯНАО, динамичное и устойчивое развитие автономного округа. Полученные результаты применимы в деятельности органов управления общим образованием.

Ключевые слова: учитель, педагог, общеобразовательная школа, Крайний Север, Полярный круг, качество жизни, социологический портрет учителя, удовлетворённость трудом, социология образования

Abstract. Living in the territory of Far North (and in the equated territories) has its specificity which is reflected in all aspects of life of the population. The authors consider natural and climatic features of the Polar region and the specifics of labor's process of locals (by the example of teachers). The review of statistics and educational policy of authorities of the Yamal-Nenets Autonomous District is carried out, the results of sociological research of teachers of the region are presented (questionnaire). The analysis of periods of living of the population at the Far North is presented, the degree of social rootedness of teachers is defined, the assessment of the main factors determining the interest of migrants to work at northern school and the main motives of moving to Far North is presented. The materials of a sociological research show in general the satisfactory estimates by teaching, conditions and quality of life that allow to predict their further fixing in the territory of the District, the dynamic and sustainable development of the autonomous District. The received results are applicable in the activity of governing bodies of the general education.

Keywords: teacher, educator, comprehensive school, the Far North, the Polar circle, quality of life, sociological profile of a teacher, satisfaction with work, sociology of education

REVIEWS

Голышева В.Г. Арктические конвои и Карские экспедиции (вести из Британского Центра)

Valentina G. Golysheva The Arctic Convoys and the Kara Expeditions (news from the British Center)

Аннотация. В статье говорится об участии Валентины Голышевой в двух знаковых событиях по исследованию истории Арктики во время Великой Отечественной войны: Международный Форум в САФУ «Дервиш-75» и конференция в Салехарде «Карские Экспедиции», состоявшихся осенью 2016 г.

Ключевые слова: Дервиш-75, братство северных конвоев, конвой, Карские экспедиции, визит Принцессы Анны, гибель конвоя БД-5, патриотическое воспитание

Abstract. In her article the author comments on two important events connected with the exploration of the Arctic and the significant role it played during the WW2. Valentina Golysheva gives a retrospective view of "Dervish-75" International Forum in NARFU and the "Kara Expedition" conference in Salehard held in autumn of 2016.

Keywords: Dervish-75, fraternity of Russian Convoys, convoy, Kara expeditions, visit of HRH Princess Anne, loss of Convoy BD-5, patriotic education

Лукин Ю.Ф. Соловки как объект культурного наследия Арктики

Yury F. Lukin Solovki as an object of cultural heritage of the Arctic

Аннотация. Соловки как многосубъектный объект культурного и природного наследия Арктики являются одним из уникальнейших памятников нашего времени, объединяющим в одном месте несколько исторических эпох в жизни России. Обзорная статья представляет одну из первых попыток в научной литературе комплексно подойти к изучению всего культурно-исторического наследия Соловецких островов с глубокой древности до наших дней на основе междисциплинарного подхода.

Ключевые слова: *Соловецкие острова, Соловки, археологические стоянки, лабиринты, монастырь РПЦ, Соловецкий административно-вотчинный округ Поморья, монастырская тюрьма, СЛОН, учебный отряд Северного флота, Соловецкий музей-заповедник, ЮНЕСКО, Соловецкие форумы, местное самоуправление*

Abstract. Solovki as a multi-subject object of cultural and natural heritage of the Arctic is one of the unique monuments of our time, bringing together several historical periods in the life of Russia at one place on the islands of the White Sea. The review article presents one of the first attempts in the scientific literature to make a comprehensive approach to the study of all the cultural and historical heritage of the Solovetsky Islands from ancient times to the present day, based on a multidisciplinary approach.

Keywords: *Solovetsky Islands, Solovki, archaeological sites, labyrinths, the monastery of the ROC, Solovetsky administrative and patrimonial district of Pomorye, the monastery prison, SSPC, training detachment of the Northern Fleet, the Solovetsky Museum-Reserve, UNESCO, the Solovetsky forum, local self-governance*

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