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Social-psychological well-being of rural population in the White Sea coastal area as a risk factor for the Russian Arctic policy



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Abstract. The article represents a generalized data from sociological survey of social-psychological well-being of the rural population of the coastal areas in Arkhangelsk region (included into the Russian Arctic zone) held in 2015. The data shows a critical level of social pessimism, assurance of residents in continuation of negative social-economic dynamics, deficiency of motivation and readiness for active participation and inclusion into the development of territories. Such a status is based on a deep degradation of local industries,

infrastructures and social sphere, which has been confirmed by statistic data. The revealed indicators explain high migration preparedness, especially in groups of working ages, proceeding, in the middle-term prospective, to the risk of depopulation and disintegration of social carcass in the coastal areas which, in their turn, possess a significant resource potential. At that, residential population on these areas considered as strategic factor from the perspective of Russian geopolitical interests in the Arctic. A positive trend may be provided through implementation of spatial approach to the social-economic development, which has been already applied in activities held by the Russian State Commission on the Arctic Development. With that there is obvious relevance of correction of the Russian legislation toward transformation of residential population into the beneficiary party of the macro-regional development, which may be provided by establishing of special regimes and preferences in spheres of natural resource use, tax assessment, entrepreneurship and crediting for all groups indigenous (resident) population, including aboriginal people of the North.

Keywords: Russia, Arctic zone, coastal rural areas, indigenous (resident) population, social-psychological well-being, migration, labor force balance, degradation of local economy, spatial development

On March 9, 2016 the meeting of the Presidium of the State Commission for the development of the Arctic was held, where the decision was taken having strategic importance not only in framework of activities in the Russian Arctic, but also for policy of development of Siberia and the Far East¹. Perhaps for the first time in recent history the limitedness of the sectoral approach to the formation and implementation of target programs of the development of territories was fixed. The Presidium of the State Commission at the meeting in Murmansk supported the area-oriented principle of the new version of the State program for the Arctic zone of the Russian Federation (AZRF), providing forming in macroregion of eight regional core delopment zones².

¹ Dmitrii Rogozin provel zasedanie prezidiuma Goskomissii po voprosam razvitiia Arktiki. 09.03.2016 // URL: http://government.ru/news/22162 (accessed: 17 May 2016).

² Protokol zasedaniia prezidiuma Gosudarstvennoi komissii po voprosam razvitiia Arktiki ot 9 marta 2016 goda № 1 // Ofitsial'nyi sait Gosudarstvennoi komissii po voprosam razvitiia Arktiki. 18.03.2016. URL: http://arctic.gov.ru/4370391e-a84c-e511-825f-10604b797c23 (accessed: 17 May 2016).

The approach based on a combination of interests and potential of sectorial companies in the Arctic, areas and public associations, gives grounds for confidence in the effciency of the decisions approved in the basic documents of the Russian Arctic policy 2008—2015, objectives to improve the quality of life of the population and arranging of social conditions for the economic activities in the Russian Arctic, to stimulate new development projects, processing of aquatic biological resources, marine biotechnology, testing of integrated coastal zone management (ICZM) models, the development of the Arctic tourism and resource potential of the fisheries³.

The essence of the forming national Arctic policy of Russia thus objectively corresponds to the calls of representatives of the Soviet and Russian science who pointed out starting from 1970s about the necessity to refuse from resource-intensive, costly, and environmentally hazardous industrial rigid models of Northern Development [1; 2; 3; 4]. Then the necessity of using the principles of regional planning and development management in the Arctic regions, including ICAM, formation of regional industrial complexes and other solutions was motivated [5; 6; 7; 8].

The implementation of the priority guidlines of the development policy of AZRF is reasonable and possible only when you keep permanent population and sustainable livelihoods. The issue of correspondence of the measures taken by the leadership of the country to this criterion is the subject of longstanding difficult debates, become active by 2016 in connection with the next series of attempts of federal and regional authorities to develop the draft of the law about the Arctic zone. Providing of the positive demographic processes in the macro-region, including in countryside (rural) districts of the Arkhangelsk region must become the indicator of efficiency of such a law. Areas of this region are special part of the Arctic: the stretch of municipalities as part of AZRF is only 5% of its area, but here ≈28.2% of the total population of the Arctic zone (over 650 thousand of people) are concentrated.⁴ According to 2010 Census, 659,921 people or 27.2% of the total population of the Russian Arctic: 2,424,421 people live in 7 municipalities of Arkhangelsk region, forming AZRF (municipalities: Arkhangelsk, Severodvinsk, Novodvinsk, Novaya Zemlya; MD: Mezensky, Onezhsky, Primorsky) [10, p. 154].

The study of the sentiments of the population of the White Sea part of AZRF

³ Osnovy gosudarstvennoi politiki Rossiiskoi Federatsii v Arktike na period do 2020 goda i dal'neishuiu perspektivu (utv. Prezidentom RF 18.09.2008 N Pr-1969)// Rossiiskaia gazeta. 2008. Stolichnyi vypusk № 4877. 27.03.2009. Strategiia razvitiia Arkticheskoi zony Rossiiskoi Federatsii na period do 2020 goda i obespeche-niia natsional'noi bezopasnosti. URL: http://government.ru/info/18360. Postanovlenie Pravitel'stva Rossii-skoi Federatsii ot 14.03.2015 № 228 «Ob utverzhdenii Polozheniia o Gosudarstvennoi komissii po voprosam razvitiia Arktiki». URL: http://government.ru/media/files/Cozw5FAxCGc.pdf (accessed: 17 May 2016).

⁴ Calculations of the author based on the data of Rosstat TOGS (www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog). See also [9].

The White Sea part of AZRF is historically the first area of the opening and development by Russians of the Arctic and Siberia, the Far East and Alaska. At present, significant factor of the implementation of the potential of this part of the Russian Arctic is a social and psychological well-being and unity of indigenous people, their willingness to live and work in the area, the presence of social solidarity, conjugate with the responsibility for the future of the territories.

During summer 2015 sociological study was conducted for the detection of indicators and evaluation of the relevant sentiments, involving 22 localities with a total population of over 12.7 thousand people⁵ in coastal rural communities of Mezsky, Onezhsky and Primorsky municipal districts.

The study was conducted through individual formalized questionnaires of residents of these localities by random sample technique, over 18 years at the place of permanent stay of the respondents. According to the municipal passports of districts on 01.01.2013 the total number of people aged over 18 years in the localities where the study was conducted amounted to 10.58 thousand of people. Sample population was 577 respondents, maximum sampling error — 3.2%. As shown in the diagram, the age of some localities is two or more centuries (see Figure 1).



Figure 1. Diagram of position of studied locations.

⁵ The study of the population and expert interviews were conducted in the framework of the Russian Humanitarian Science Foundation and the Government of the Arkhangelsk region № 15-13-29601 e (p) "The human and economic potential of coastal areas of the European part of the Arctic zone of Russia (by the example of the Arkhangelsk region)."Participants of the project: Cand Sc, Assoc. Prof. A.O. Podoplekin (head), prof., Dr. of Ec. V.I. Pavlenko, Cand. Sc. O.V Gubina, A.V. Ukhanova (Federal Research Center for a comprehensive study of the Arctic, RAS, previously — Arkhangelsk Scientific Center of UB of RAS); Cand. Sc. K.O. Malinina, N.P. Tsukanova (GAU of Arkhangelsk region "Public Opinion Research Center."); Dr of Sc. O.V. Ostroukhov, Cand. Sc., Assoc. Prof. P.S. Zhuravlev.

The results confirmed the high rootedness of the local population — the vast majority (84.1%) live in the territory of the coastal area for over 20 years, and in settlements of Mezensky district more than 92.3%, with the proportion living in the territory for a long time dominates in every age category. The most typical sentiment of the population is determined by people as "normal and stable" (71.1%), differences between gender and age groups are not identified; about 10% have constant uncertainty and irritation. More than half of respondents — 57.4% — describe their health as "average, satisfactory."

In general, the population of the inspected areas is economically active, most people are employed for regular jobs. 29.6% of local people indicate that they are retired. Next most popular sphere of activity — transport (10.4%), due to the objective need to ensure communication between distant villages. In Mezensky district there is significant predominance of pensioners — 40,1%. In addition, the second group share of unemployed people — 9.9%.

Indicators of population mobility greatly vary in municipal districts: the largest proportion of respondents (45.4%) in Primorsky district leaves the settlement 1 time per week, in Onezhsky district: 1-2 times per month (45.7%), and in Mezensky 1-2 times per year (57.7%), in this area there is also the highest proportion (20.3%) of those who does not leave their settlements during the year. In general, the distribution of the inspected area groups leaving the settlement 1 time a week, 1-2 times a month, 1-2 times in six months, 1-2 times a year and never leaving during the year is: 18.0%, 26.0 %, 18.4%, 27.9% and 9.7% respectively.

In general, 54.2% of respondents live in comfortable apartments, 42.5% have private houses as primary residence. Predominance of private houses is revealed in Mezensky district. 42% noted availability of private houses; of apartments — 54%, outbuildings — 72%, garage — 36%, the bathhouses — 49%, access to the Internet — 55%, personal computers — 65%, GPS-navigator — 7%, mobile connection — 75 %, satellite TV — 66%, chainsaw — 54%, boat — 18%, motorcycle — 23%, car — 34%, snowmobile and quadricycle — 16% and 4%, tiller — 10%.

The unity of people in the area is based primarily on the community with the inhabitants of their village and peers (by \approx 40%), professional colleagues (32.2%), fellow citizens (24.1%) and people of the same lifestyle (19.4%). It is noteworthy that the villagers are positioned as the main source of information about the outside world (78.3% selection rate), while other options were chosen with much less frequency: own observations — 30.3%, local newspapers — 21.3%, advertisment board — 16.1%, Internet — 15.8%, local television stations — 7.6%.

Big number of people say that "in our village you can always rely on someone's help" (65.2%), "people talk to each other a lot" (71.6%) and "times have changed, but the relationship

between the people remain the same" (58.4%) indicates signs of continued social solidarity in the settlements. At the same time, citizens notice such processes as growing desire of people to take care of themselves only (74.2%) and closeness in the relationship between people (63.6%), while 60.3% of respondents do not believe they can count on help of authorities in emergency situations. Most of all, locals tend to rely on their own strength as a guarantee of personal wellbeing (96.5%), while 72.4% admit that it also depends on the social situation in general. Checking personal satisfaction with various aspects of personal and social life, the excess of positive responses in rural communities over the negative was observed only in part of the work (56.0% / 30.8%), their own life as a whole (72.8% / 26.3%), the relationship between villagers (76.3% / 22.9%), living conditions (61.9% / 37.1%), education at school (71.6% / 27.6%) and safety (71,1% / 27.6%). At the same time, mostly personal dissatisfaction is shown in relation to the material conditions, opportunities to participate in decision-making of the life of settlement and employment, health services and conditions for the education of children, housing and communal services and improvement, the availability of sports facilities and the quality of bank institutions. The opinions about set of the priority measures to improve the situation in rural areas are divided as following: road construction and repair — 24.6%, rural area improvements — 15.9%, generating emplyment — 10.6% of the responses. Also the residents of coastal villages mark the presence and acuteness of environmental problems, the main ones from which are littering (over 84%), water pollution (34.7%), uncontrolled deforestation (21.1%) and forest fires (12.8%). Recognizing the structure and sharpness of settlement problems, a sense of personal responsibility of habitants is connected to the greatest extent with family (about 94%) and work (over 48%), while with the settlement, the region and the country — only 5.95%, 0% and 1.2% respectively. Personal abilities to influence on these spheres are estimated similarly: family and work — 92.9% and 41.1%, and with their settlement, region and country — only 6.4% and 0.5%, respectively. Similar gap is seen on the one hand between the declared willingness of people to stand up united for joint actions in the general interests and for the decision making of priority issues with villagers (68.8%) and local autonomous government bodies (64.4%), as well as the acceptance that "people should not rely on the authority, you need to take the initiative in your own hands" (66.9%) and that "many problems would be solved if people actively participate in their solution" (89.1%); and, on the other hand, with self-esteem of participation in such activities — in total more than 68% of the respondents admitted their own passivity in the social life of their settlement.

The social activity of population

The following variants were often chosen as the reasons preventing citizens' active participation in the development of residence areas: "lack of time, employment", "lack of faith in the possibility to influence on the decisions of the authorities" and "lack of knowledge, incompetence" — 32.6%, 28.1 % and 27.0% respectively. However, following opinions were expressed most often regarding total social activity: "the situation in the village is no longer dependent on the citizens, but on the situation in the country as a whole" (56.8%), "many citizens are not interested in decision-making participation" "(80.4%), and even that" the participation of the residents [in such decisions] can lead to conflicts "(57.7%).

Experts' opinions about economic and social activity of the population coincide with the selfesteem of the population, keynote of the majority of views is the ideas that the "population" is rather passive, many are waiting for someone else's decisions, instructions, or do not see any prospects; there is lack of knowledge, information", "inactive, does not want to work (and there are no jobs)."

Many people think that nothing depends on them, everything is decided "in the higher authority". Defining subjects that have the strongest impact on the socio-economic situation in the areas, the survey participants gave only the fifth place to the population (16.3%) while the greatest responsibility was given to heads of villages and districts (45.8% and 31.0%), local entrepreneurs and managers of enterprises (24.4% and 23.7%). Options "Governor" and "No one" got 11.8% and 12.5%, respectively.

Disbelief and often unwillingness to actively change life is manifested, in particular, in the fact that almost 80% of the owners of the above property do not try to use it to earn additional funds.3/4 of the respondents do not wish or do not see any need to learn new crafts as a means of earning. More than 91% do not keep and do not want to keep livestock or poultry, 84.9% of respondents said they did not engage in any crafts, and 79.5% will not even deal with it for material reasons. Miniscule share of respondents gathers berries and mushrooms for sale. More than 56% believe that there are no any objects of interest for tourists in their areas, and over 89% do not have a desire to participate in the reception of tourists and hospitality activities. Knitting (82.8%) and embroidery (14.9%) are the most popular crafts. The attitude to keep national crafts is apathetic — 75.2% expressed reluctance to study arts and crafts. 53.2% of people do not see the need for retraining which is an instrument of revival of economic activity, although the reverse point of view (53% and 51.1%, respectively) dominates in Mezensky and Primorsky districts.

Socio-economic situation on the White Sea Coast

43.7% of respondents of the whole White Sea coast believe that the socio-economic situation has not been changed for the last 3 years, though separately in Mezensky district 36.8% noted its deterioration. The second selection frequency answer (32.4%) indicates a negative vision of dynamics of the life quality, and 13.9% noticed improvement in the economical situation of the territories. Pessimistic public perception of socio-economic dynamics is reflected in the views of inhabitants of the rural settlements for the future: deterioration is foreseen from 41.1% in the Primorsky district to 58.8% in the Mezensky district, and 51.1% in general, for all rural settlements.

Experts also pointed out qualitative changes for the worse, highlighting such aspects as the outflow and an ageing of the population, low wage growth, increase of prices for products, services, fuel, electricity, absence or production curtailment, poor quality of roads, unemployment, lack of interest of the population in cooperation with authorities and rise in crime. Residents of all rural communities emphasized most frequently (25% or more cases) following socio-economic problems: transport inaccessibility of settlements, and the low level and accessibility of healthcare, the low level of income, low quality of housing and communal services and increase of tariffs for them [11].

The social and psychological well-being of the rural population of the coastal area of Arkhangelsk region corresponds to objective indicators of the state of their economic and social sphere. Taken together with the data of state statistics they allow to characterize the dynamics of agricultural and industrial production in the surveyed areas as a degradation. One of the key obstacles of economic, social and cultural development, adversely affecting the investment attractiveness and market competitiveness of the coastal rural setlements is a critical state of infrastructure, especially roads. Economic dynamics in the settlements corresponds to the state of their budgets, incomes of which are exclusively connected with uncompensated receipts from other levels of budgetary system of the Russian Federation [12].

Most locals get the material support at the expense of their permanent jobs, in total the indicator reaches the value of 45.2%. The largest share of respondents who have a steady job lives in Primorsky district - 58.9%, in Mezensky area - 33%. Besides, just in this minicipality the general trend is breaking and the prevailing share of the pensioners here is 40.7%. The highest percentage of working pensioners among regional clusters is observed in Primorsky district - 11.7%. In Mezensky district relatively high number of local residents prefer to have temporary work - 7.7%.

Among younger generation trade is the most popular field of activity, and in the middle age group the sphere of education and housing prevails. The unemployment rate reaches the highest values in the age group from 18 to 39 years. In Onezhsky district the share of pensioners is confirmed as 28,4%. The most popular field of activity is transportation. However, the group of non-working citizens is also numerous — 10.3%.

In general, the unemployment rate is the highest in the group of persons between 18 and 29 years old. The prevailing level of education among local residents is secondary vocational education, index value for the sample reaches 56.3%. 30.7% of the respondents have secondary education. The largest share of respondents with higher education is fixed in the Primorsky distrct (15.3%).

Migration sentiments in local communities

The general situation of the economy and the relevant social and psychological situation in coastal rural areas of the Arkhangelsk region naturally stipulate high migration readiness: almost a quarter of the residents plan relocation or do not exclude it in general. In groups of age 18—29 and 30—39 years more than 30% and 11% of respondents clearly planning to go respectively. Three years before the survey, the rates of natural growth and migration of all settlements are only negative, the share of working-age citizens among leaving was about 70%, and in some villages of Mezensky and Onezhsky districts in the range of 85-100%. In 2014 rates of population increase and migration increase averaged across in all rural settlements -11.1% and -22.87% respectively.

Migrants move with their families, which creates a threat to the reproduction of labor potential. The negative demographic trend is accompanied by a corresponding change of balance of labor resources. The share of working-age persons among those who left rural settlements in 2014 range from 65% to 100%, due to which high demographic burden ratios within \approx 73-176,8 are marked in all municipalities. The main reason for the high values of the ratio is a big burden by pensioners. The main problems which pushed young people out from rural areas are the impossibility of getting good jobs — 79%, lack of modern leisure — 52%, lack of houses or apartments with all modern conveniences — 45%, economic insecurity — 32%, low income and lack of access to education — to 14%.

The results of the research, conclusions

The considered characteristics of the economy and the social and psychological well-being of rural settlements of three municipal districts of Arkhangelsk region give evidence about the process of depopulation of the White Sea coastal area of the Arctic zone of Russia against the background of

a critically high level of social pessimism of the population. These phenomena already implement the threat of collapse of historically the earliest socio-economic framework at a single in the Russian Arctic territory with a permanent (indigenous) Russian rural population, a high concentration of historical and cultural heritage and relatively favorable climatic conditions for economically viable development of commercial agriculture, fisheries and aquaculture.

The set of judgments of the participants of questionnaires and expert interviews about the reasons of the crisis in the surveyed areas is concentrated around two premises. First and not basic, is the consequences of socio-economic problems in Russia as a whole — the so-called "administrative barriers" preventing to the small and medium entrepreneurship, the pressure of the monitoring bodies, the unavailability of loans, the cost of connections to networks, tariffs and rents, and corruption. Expert assessments emphasize the need to "restore production, agriculture, and large enterprises, for operation of which large staff of experts is needed", in "recreation and entertainment center (bowling alley, movie theater, billiards), "which would make possible to spend time with friends, family or co-workers in "intelligent environment", "opportunity to purchase housing at reasonable price or to get company housing", in the issues of recovery of "the worn material base of available sports grounds".

However, the second group of mentioned reasons of degradation of life structures is connected with apparent "overmaturity" of issue about the diversification of the legislative framework and principles of social and economic development of the Russian Federation in accordance with the peculiarities of the regions and the interests of local communities. Namely, the experts and the population notice the fact that the degradation of the local economy can be overcome by the return and expansion of the rights of the local population in matters of coastal fisheries, marine fisheries, forestry and agriculture, the introduction of favorable business conditions for them. In this regard we can notice the current economic dynamics in Northern Norway, where coastal fisheries, aquaculture and fish farming stimulate the development of ports, coastal service infrastructure, local processing, and as a consequence, the growth of innovative enterprises, construction and alternative energy, influx of young people.

Thus among the economically active citizens of rural settlements there is a specific social demand for a return of preferences to indigenous Russian population in suck kind of activities which provided stable self-sufficient economic system, environmental management and social life in the coastal zone of the Arkhangelsk North centuries ago. These surveys, interviews, research and expert opinions equally indicate the potential complex effect that can be achieved by appropriate legislative and economic measures. [13] Overcoming the negative tendencies in the

coastal areas of the Russian Arctic, in the first place, such as the degradation of the social and economic structures, requires system changes in the national Arctic policy, its "Nordic likeness"[14; 15]. With regard to the Russian Arctic, especially to the most "lived-in" part of it — Arkhangelsk North, Belomoriye — these steps must be based on an approach, positioning the local population as the main "beneficiary" of projects of economic development of the territories. That in turn may require a proliferation of norms of the Russian acts providing preferential regimes of use of natural resourses to the indigenous small peoples of the North, in general, to the natives (permanent) population of the Arctic zone.

References

- 1. Agranat G.A. Territorija: povyshenie roli v zhizni obshhestva. *Izvestija AN SSSR. Ser. geograf.* 1988, № 2, pp. 5—16.
- 2. Granberg A.G. Programma fundamental'nyh issledovanij prostranstvennogo razvitija Rossii i rol' v nej Severo-Zapadnogo regiona. *Jekonomika Severo-Zapada: problemy i perspektivy razvitija*, 2009, № 2-3, pp. 5—11.
- 3. Lazhencev V.N. Prostranstvennoe razvitie (primery Severa i Arktiki). *Izvestija Komi nauchnogo centra UrO RAN*, 2010, № 1, pp. 97—104.
- 4. Luzin G.P. i dr. Sever SSSR kak objekt upravlenija i planirovanija (prirodno-jekonomicheskie osobennosti). Apatity: Kol'skij NC RAN, 1989, 27 p.
- 5. Lazhencev V.N. Territorial'no-proizvodstvennye kompleksy (TPK): iz proshlogo v budushhee. *Izvestija Komi nauchnogo centra UrO RAN*, 2014, № 3, pp. 136—143.
- 6. Gorodeckij A.I., Ivanov V.V., Filin B.N. Pravovye i metodicheskie problemy strategicheskogo planirovanija razvitija arkticheskih regionov Rossii. *Arktika: jekologija i jekonomika,* 2014, № 4 (16), pp. 4—13.
- 7. Melamed I.I., Pavlenko V.I. Pravovye osnovy i metodicheskie osobennosti razrabotki proekta gosudarstvennoj programmy «Social'no-jekonomicheskoe razvitie Arkticheskoj zony Rossijskoj Federacii do 2020 goda». *Arktika: jekologija i jekonomika,* 2014, № 2 (14), pp. 6—15.
- 8. Lipina S.A. Innovacionnyj vektor razvitija pribrezhnyh territorij Rossijskoj Arktiki. *Arktika i Sever*, 2016, № 22, pp. 66—74.
- 9. Sinitsa A.L. Demograficheskoye razvitie regionov Arkticheskoy zony Rossii v 2010—2014 gg. *Arktika:* ecologiya I ekonomika, 2016, № 1 (21), pp. 18—27
- 10. Sokolova F.H. Jetnodemograficheskie processy v Rossijskoj Arktike. *Arktika i Sever*, 2015, № 21, pp. 151—164. URL: http://narfu.ru/upload/iblock/950/12-_-sokolova.pdf (Accessed: 30 May 2016).
- 11. Podoplekin A.O. Polozhenie korennogo naselenija i territorij ego prozhivanija v Arhangel'skoj oblasti kak sub#ekte Arkticheskoj zony Rossii. *Semiotika edinstva i jetnokul'turnogo mnogoobrazija istoricheskogo prostranstva Russkogo Severa: sb. nauchnyh statej* [otv. red. d-r filos. nauk, prof. N.M. Terebihin]. Arhangel'sk: SAFU im. M.V. Lomonosova, 2015, pp. 25—31.
- 12. Uhanova A.V., Gubina O.V. Ocenka social'no-jekonomicheskogo potenciala pribrezhnyh selskih poselenij Arhangel'skoj oblasti, raspolozhennyh v Arkticheskoj zone Rossijskoj Federacii. *Jekonomika i predprinimatel'stvo*, 2015, № 12, pp. 317—326.
- 13. Pavlenko V.I., Torcev A.M. Napravlenija sovershenstvovanija gosudarstvennoj podderzhki tovarnogo rybovodstva na Evropejskom Severe Rossii. *Izvestija Komi nauchnogo centra UrO RAN*, 2015, № 4 (24), pp. 130—139.
- 14. Melamed I.I., Avdeev M.A., Pavlenko V.I., Kucenko S.Ju. Arkticheskaja zona Rossii v social'nojekonomicheskom razvitii strany. *Vlast'*, 2015, № 1, pp. 5—11.
- 15. Lazhencev V.N. Sever Rossii: al'ternativy na budushhee. *Sovremennye proizvoditel'nye sily*. 2013, № 2, pp. 115—124.