

Specifics of Demographic Development of Arctic Regions as a Determining Factor of Social Management System Development Evaluation

Egorova Maria
Institute for design-technological informatics
Russian Academy of sciences
Moscow, Russia
cassandra1@list.ru

Karlova Tatiana
Institute for design-technological informatics
Russian Academy of sciences
Moscow, Russia
karlova-t@yandex.ru

Sheptunov Sergey
Institute for design-technological informatics
Russian Academy of sciences
Moscow, Russia
ship@ikti.ru

Abstract—Nowadays, the role of the Arctic in the world is constantly growing. Many states link their long-term goals with the Arctic region. Since 2000, the changes that are occurring in the region have global economic and political consequences. The concept of human development has emerged in recent years as an alternative to such dimension of human well-being or the quality of life as gross domestic product (GDP) per capita. The nature of human development in the Arctic, the attempts to understand and regulate it have become key issues not only for the development of the Arctic people themselves, but also for the development of the entire Arctic region. Depending on the proportion of indigenous and non-indigenous population, the age factor in each circumpolar region significantly affects the social and economic conditions of the territory. The driving forces of social and economic development of the Arctic regions and the main macroeconomic indicators (gross regional product per capita, life expectancy etc.) cannot provide the necessary positive dynamics in the implementation of "social potential" of the Arctic region. Accordingly, action is needed to create conditions that would reveal the full potential of the Arctic regions of Russia and ensure high level and quality of life in the framework of the new social policy.

Keywords—Arctic region, demography, social management, human development, gross domestic product, indigenous population, non-indigenous population, life expectancy, total birth rate.

I. INTRODUCTION

"The prospects for the Arctic region are such that it can become the largest energy storehouse and a key transportation hub of the planet. The 21st century is often called the "Century of the Arctic": it was at the beginning of the new century that the prospects for development of the region were determined, and investment resources for the implementation of large-scale Arctic programs became available. Vast natural resources, potential oil and gas resources, as well as transit opportunities make the control over the circumpolar region a geopolitical priority for many states of the modern world [1]."

Since 2000, the changes that are occurring in the region have global economic and political consequences. It can be said with certainty that the

Arctic is one of the strategic points in development of the modern world. In this regard, the vector of further development of the Arctic region, global integration processes and priorities of the world economy and politics playing a dominant role in the Arctic region, as well as the national interests of the Arctic states and other countries, one way or another related to them, constitute links in one and the same chain.

II. RELEVANCE

The relevance of this study is associated with "an increase in the scale and power of anthropogenic impact on the nature and society in the Arctic region, with the global nature of consequences of decisions made, with the awareness of irreversibility of social processes and the irreducibility of most vital resources [2]."

Currently, general social and managerial technologies and their philosophical understanding have been sufficiently studied and presented in domestic and foreign literature. But the analysis showed that the mechanisms of social management in such region as the Arctic, being the most important aspect of region development, require detailed consideration, research, analysis and improvement. The concept of human development has emerged in recent years as an alternative to such measurement of human well-being or the quality of life as gross domestic product (GDP) per capita. The nature of human development in the Arctic, the attempts to understand and regulate it have become the key issues not only for the development of the Arctic people themselves, but also for the development of the entire Arctic region.

Arctic Human Development Report [3] is undoubtedly one of the recent fundamental works in terms of understanding the place and role of man in the Arctic. Until recently, the Arctic region was considered only as an archaeological area. Today, the circumpolar space of the Arctic is the cultural and political reality in the context of Russia's entering into a productive dialog with its Western partners and neighbors.

Undoubtedly, human development is an extremely important aspect of ensuring the sustainable development of the Arctic and, accordingly, the Russian regions of the Arctic. As noted above, the human development index (similar to the UN Human Development Index), which also includes life expectancy and the average level of education, obviously provides a fuller characteristic of human development than just the gross product per capita. However, certainly, the indicators of human development, which are better correlated with the conditions of the region, must be taken into account. For example, the percentage of children receiving comprehensive schooling may not be an objective measure of education in a region (society), where crafts still have economically justified value, and knowledge is passed on from generation to generation through practical experience. In a sense, it is a matter of determination of additional human development parameters that play a significant role for a particular region.

Certainly, as noted in the Arctic Human Development Report [3], this does not mean that lifestyles, cultures or social institutions in the Arctic region are lower than in regions with higher human development index values. Many people in the region, especially the natives and long-standing inhabitants, associate a good life with the preservation of traditional crafts and reindeer herding. At the same time, it is difficult to use indicators such as GDP per capita to measure the viability of a customary or even mixed economy. For many, welfare is expressed in a way of life, in which the need for many material goods and services included in the estimated GDP per capita is kept to a minimum. The same issues apply to education. Many people in the Arctic have significant knowledge essential for their well-being. But this knowledge may often be not expressed in high rates of adult literacy and school enrollment. Even the value of such an indicator as the life expectancy is ambiguous. The history of the Arctic region shows that longevity in itself is not the highest priority. And this means there are similar problems in the field of health care and demographic challenges inseparably associated with them.

Before moving on to studying the actual demographic problems of the Arctic region, it is necessary to determine the geographical boundaries of the region in question based on available data.

According to the authors of Arctic Human Development Report [3], the region covered by the Arctic Monitoring and Assessment Program (AMAP) [4, 5] 1997 and 2002 can be considered as a starting region. However, in our opinion, given the legal and administrative boundaries, the Arctic space proposed by the authors of the Arctic Human Development Report [3], slightly different from the AMAP Arctic map, reflects the actual situation more accurately. The Arctic includes entire Alaska, Canada north of 60°

north latitude, with northern Quebec and Labrador, entire Greenland, the Faroe Islands and Iceland and the northern provinces of Norway, Sweden and Finland. Russian regions of the Arctic cover Murmansk region, Nenets, Yamalo-Nenets, Taimyr and Chukotka autonomous districts, the cities of Vorkuta in Komi Republic, Norilsk and Igarka in Krasnoyarsk Krai, as well as areas of Sakha Republic located close to the Arctic Circle.

The demographic situation in different parts of the circumpolar region is varying. However, there are general characteristics of the population, showing the "similarity" of various groups of residents of the Arctic and their determinative differences from the population of the southern territories or other non-circumpolar regions of the northern part of the hemisphere. It is obvious that at the end of the 20th century (and this trend still persists), the outflow of the population exceeded the inflow. The age structure of Arctic population differs from that of the southern part of the territories under consideration.

A significant difference is a large proportion of working-age population, as well as (in certain circumpolar regions) young age groups, and a smaller proportion of older age groups. This, in our opinion, is a positive phenomenon in the context of achieving social potential.

This feature of the age structure is determined by the influx of working-age migrants and the outflow of retirement-age people. Figures 1 and 2 present data on the total birth rate in countries and regions of the Arctic, and Figures 3 and 4 present data on life expectancy.

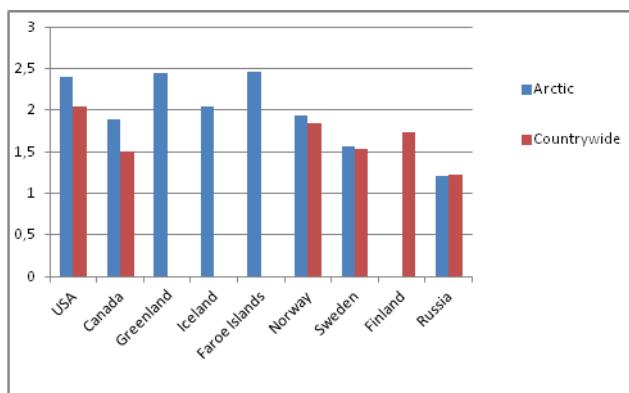


Fig. 1. Total birth rate in countries and regions of the Arctic (according to the Arctic Human Development Report [3] and author's statistical studies, 2007 – 2016)

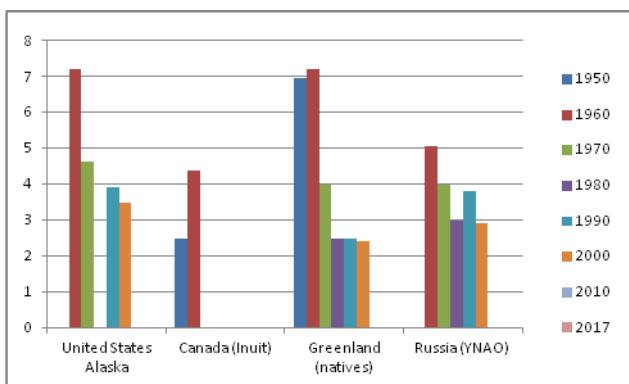


Fig. 2. Total birth rate – native peoples of the Arctic (according to the Arctic Human Development Report [3] and author's statistical studies)

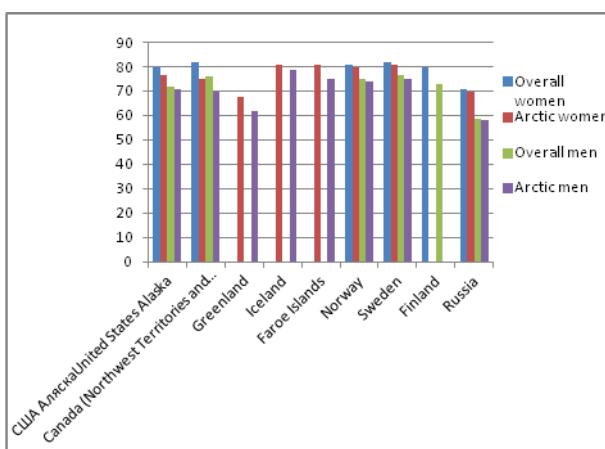


Fig. 3. Life expectancy. Arctic areas and countries (according to the Arctic Human Development Report [3] and author's statistical studies)

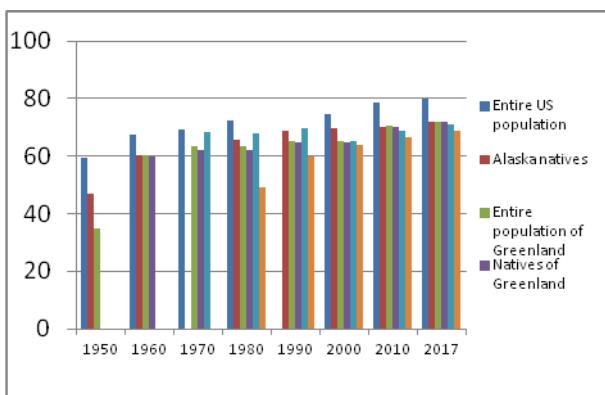


Fig. 4. Life expectancy. Native peoples of the Arctic (according to the Arctic Human Development Report [3] and author's statistical studies)

Studying the available data on the indigenous population, we can conclude that, as a rule, it turns out to be much younger.

Some of them have been living here for thousands of years. Another part of the circumpolar population is non-indigenous. These ethnically diverse groups differ markedly in demographic characteristics and lifestyle,

despite a significant rapprochement in recent decades. Depending on the proportion of indigenous and non-indigenous population, the age factor in each circumpolar region significantly affects the social and economic conditions of the territory. This is exemplified by Nunavut in Canada, where 85 % of the population are Inuit and only 15 % are non-indigenous. The average age of Inuits in Nunavut is 19 years (this means that half of the Inuit population is younger than this age). If we include the non-indigenous population of Nunavut in the calculation group, the value of the average age increases only to 22 years due to the high proportion of Inuit population. As a comparison, in another part of Canada, Yukon Province, where the population is 75 % non-indigenous, the average age is 35.8 years, which is only 2 years less than in Canada as a whole. At the same time, the average age of the indigenous population is 28.6 years.

The following indigenous peoples are found in the Russian regions of the Arctic (west to east): Saami, Nenets, Hangi, Selkup, Enets, Nganasans, Dolgans, Evenks, Evens, Yukagirs, Chukchi, Chuvans and Eskimos/Inuit-Yupiks.

As for the population dynamics, this is also one of the serious criteria in assessing the social development potential of the region.

In European countries, the proportion of population living in northern areas is gradually decreasing. For example, in Norway, the maximum percentage (12.5 %) was recorded in the 50s, in Sweden – in the early 60s (3.5 %), in Finland the maximum values fall on the mid-60s (4.8 %). At present, the share of population of the northern territories is 10.2 % in Norway, 2.9 % in Sweden, and 3.6 % in Finland. Until recently, the proportion of the population of Russia living in its Arctic regions was constantly growing. It reached maximum in 1990 (1.7 %). However, the subsequent sharp decline reduced it to 1.4 % in 2002.

The article by D.A. Gaynanov, S.A. Kirillova, O.G. Cantor [6] proposes a method for diagnosing the social potential of the Russian Arctic regions. Using the method presented in this study [4] for the total number of Arctic regions and other entities of the Russian Federation, the authors estimated the degree of influence of "elements of social potential" [6] on the volatility of development of these regions and on this basis made allowed determination of the "fulfilled potential" value. The authors designed a system of indicators (using scientific studies, with their results given in [7]), including criteria showing the effectiveness of using certain types of resources under consideration, such as "labor, investments, fixed assets and budgetary funds" [6], as well as "the performance of social sphere branches, the sphere of ecology, the effectiveness of activities of public authorities and management, indicators characterizing the level and quality of life of the population" [6]. The authors studied the implementation dynamics of "social

"potential" elements of Russian Arctic regions, such as demography, health care, education and quality of life. Moreover, the comparison was carried out on the basis of total aggregated indicators of the regions (the Arctic) and Russia as a whole. In this context, it is interesting that, using the proposed methodology [6,8] as a basis, an analysis of statistical data of recent years (2015–2017) was carried out, taking into account the differentiated regional data slice.

By combining the development dynamics charts of "social potential elements" [6, 9] of Russian regions of the Arctic and other subjects of the Russian Federation, the components chosen by the authors of the work [6] (demography, education, health care and living standards) did not reveal any significant differences in the resulting picture (Fig. 5) of Russian regions of the Arctic [10] in comparison with other entities of the Russian Federation.

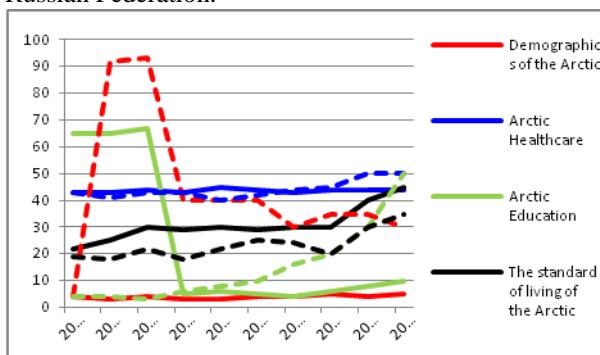


Fig. 5. Analysis of "social potential elements" [6] development dynamics (Y-axis – "potential" usage percentage by year)

III. CONCLUSIONS

- Based on the results of studies of statistical and informational materials, it can be stated that the concept of human development is an alternative to such measure of human well-being or quality of life as GDP per capita.
- Depending on the share of indigenous and non-indigenous population, the age factor in each

circumpolar region significantly affects the social and economic conditions of the territory.

- Positive social and economic development of Russian Arctic regions does not provide dynamic growth in achieving the "social potential" of the Arctic regions.
- It is necessary to identify and implement measures to create conditions that could contribute to maximizing the potential of Russian Arctic to achieve a high level and quality of life based on an absolutely new social policy in the region.

REFERENCES

- Mazur I.I., The Arctic is a bifurcation point in the development of the global world, Age of globalization, Issue vol. 6, 2010, pp. 93–104.
- Belov A.V., Social responsibility: the author's abstract diss. Ph.D. in philosophical sciences: 09.00.11, Volgograd: Volgograd State University, 2011, p. 3.
- Arctic Human Development Report / translation from English under the editorship Golovnev A.V., Ekaterinburg, Salehard, 2007, p. 244.
- Arctic Monitoring and Assessment Programme (AMAP), Arctic Pollution Issues: State of the Arctic Environment Report. ISBN 82-7655-060-6, © Arctic Monitoring and Assessment Programme, Oslo, 1997, p. 12.
- "AMAP", Access mode: <https://www.apmap.no/> (retrieved: 25.07.2017).
- Gaynanov D.A., Kirillova S.A., Kantor O.G., Diagnostics of realization of social potential of the Russian Arctic regions from the perspective of sustainable development, Vestnik of Tomsk state university, 2013, vol. 376, pp. 132 – 136.
- Kirillova S.A., Kantor O.G., Identification of Russian Arctic regions from the perspective of spatial heterogeneity, Region: Economics and sociology, 2013, vol. 2 (78), pp. 48 – 65.
- Egorova M.S., Karlova T.V., Socioeconomic issues of industrial development of Russian Arctic regions, Vestnik of STANKIN, 2014, vol. 1 (28), pp. 160-163.
- Egorova M.S., Risks and difficulties in the economic development of the arctic and ways to handle them, Fundamental researches, 2014, vol. 8-1, pp. 221-226.
- Egorova M.S., Economic development of the North and the Arctic in Canada, Saarbrueken, Germany: Lambert Academic Publishing, 2014, ISBN: 978-3-659-59215-7, Copyright© 2014 OmniScriptum GmbH & Co. KG, p. 115.
- Egorova M.S. ,Features of the demography of the arctic regions as one of the determining factors to assess the development of the system of social management, Fundamental research, 2018, vol. 6, URL: <http://fundamental-research.ru/ru/article/view?id=42176>, DOL 10.17513/fr.42176