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DEMOGRAPHIC APPROACH TO ESTIMATION OF SUSTAINABLE DEVELOPMENT IN RUSSIAN NORTHERN REGIONS

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Abstract: *The article describes the transition of countries and regions to the Concept of Sustainable Development, analyzes the basic UN documents that define the concept and criteria of sustainable development. Demographic indicators highlighted from international systems of sustainable development indicators. They are complemented by indicators that reflect the degree of demographic problems in the Russian North. All northern regions are ranked by the degree of demographic sustainability: critical, low, medium, high. The text concludes that the integral index of demographic sustainability is a new tool for managing the sustainable development of regions.*

Keywords: *Russian North, sustainable development, demographic sustainability.*

INTRODUCTION

The problem of sustainable development has not lost its relevance for thirty years, beginning with the publication of the Brundtland report «Our Common Future», to the resolution adopted by the UN General Assembly: «Transforming Our World: an Agenda for

Sustainable Development for the period until 2030».

The novelty of the study is determined by the author's approach to assessing sustainable development by demographic indicators. Demographic sustainability is estimated according to four factors, including twenty-five indicators. On their basis, the integral index of demographic stability is calculated, using which all northern regions are ranked according to the degree of stability: critical, low, medium, high.

The purpose of the article is to propose an algorithm and methodology for assessing the degree of sustainable development in the northern regions on the basis of demographic indicators, both in statics and in dynamics.

Information resources - Rosstat data for 2000-2015 and the results of a survey of experts in 2017.

The main provisions and conclusions of the article can be used as a theoretical and methodological basis for determining the demographic stability at different levels of government.

The object of the study is 13 regions completely attributable to the Far North, and territories equated to them.

THE CONCEPT OF SUSTAINABLE DEVELOPMENT: APPROACHES AND DEFINITIONS

The main approaches that determined the need for the concept of sustainable development were laid in 1972 at the Stockholm Environment Conference, the first world meeting on environmental issues.

The concept of «sustainable (sustainability) society» was first formulated in 1974 in the documents of the World Council of Churches as a response to the emergence in developing countries of ideas about the exaggeration of concerns about the state of the environment in conditions where a large part of mankind lives in conditions of poverty, hunger, disease.

The concept of sustainable development came to the international arena after the 1987 publication of the International Commission on Environment and Development of the United Nations (UN) «Our Common Future» (Our Common, 1989). This report is often called the Brundtland Report. It was important for expanding the sustainable development concept beyond environmental issues and for integrating social issues at the national and international levels. It first appeared the basic formulation «sustainable development is a development in which the needs of present generations are met without compromising the ability of future generations to meet their own needs». It contains the key idea of sustainable development - as a balance between generations.

The UN Conference in Rio de Janeiro (1992) is considered to be the starting point for the study and assessment of sustainable development on a planetary scale. It defined 27 principles of the world community's behavior in the field of environmental protection and development. In the social sphere, the importance of caring for people, the right to a healthy life, eradicating poverty, supporting the identity of indigenous peoples is declared (Report of the UN, 1993, pp. 3-7).

In 2000, the UN Millennium Declaration was adopted, containing 8 development goals until 2015 and 21 tasks, including the elimination of child and maternal mortality, the fight

against serious diseases, universal primary education, and the elimination of poverty and hunger (UN Millennium, 2000).

In 2015, the UN General Assembly adopted a new «Agenda-2030», which defined 17 goals and 169 objectives in the field of sustainable development. It stresses the need to address a number of demographic problems: improving the reproduction of indigenous peoples; adaptation of migrants; an increase in the average life expectancy; reduction of infant, child and maternal mortality (Transforming, 2015, p. 3/44, 6/44, 8/44, 9 / 44).

At one time, the problem of sustainable development in the northern regions from a demographic and social point of view was considered in this publication (Lytkina, 2005; Fauzer, 1996).

There are two different views on how to interpret the concept of sustainable development. The “integrated” approach suggests that the goal of sustainable development is to ensure human well-being for both current and future generations. The “future oriented” approach focuses only on the well-being of future generations. The advantage of an integrated approach is that there are two aspects of the distribution equity: the intra-generational and intergenerational aspects. The disadvantage is that the integrated approach seeks to embrace all parties that are relevant to human well-being.

A future-oriented approach focuses only on intergenerational issues. It is closely related to the approach using capital valuation, since the latter focuses on preserving capital stocks as a prerequisite for maintaining human well-being in the long term.

Three conceptual aspects of sustainable development are defined: the human well-being of the present generation in one particular country («here and now»); the well-being of future generations («later»); well-being of people living in other countries («elsewhere») (Conference of European, 2014, p. 8, 12, 16).

In the foreign scientific literature there are works on demographic stability (Roca M., Silva V., 2002; Camarinha-Matos L.M., 2010, Stern E., 2013). The most complete «The concept of demographic stability» is presented in (Roca Z., Roca M., 2014). It includes three indicators: optimal population growth rates, corresponding to a total fertility rate of 2.1; the optimal ratio between the population is older than the able-bodied and able-bodied ages; optimal sex ratio.

Demographic stability (DS) is considered in quantitative and qualitative terms. The territory is quantitatively stable, when an optimal ratio of their size and growth has been achieved between the sexes and age groups. Demographic stability in qualitative expression consists in the competences embodied in the population. Territorial demographic stability is in qualitative terms, provided that optimal levels of employment of labor, education and skills of the population are achieved. Demographic stability of the territory is possible when a balance between quantitative and qualitative measurements is achieved due to the optimal interaction between the components.

We suggest that the demographic stability of the northern territories is achieved when:

- the ratio of birth and death rates provides slightly expanded reproduction of the population;
- the able-bodied part of the population is sufficient to provide human resources for the branches of the national economy;
- there is a margin of labor strength of labor for the economy: the number of people entering into employment exceeds the outgoing labor resources;

- sex-age proportions are optimal, they contribute to the creation of complete families, the birth of children in marriage, the excess of the demographic burden by young people, over the load «from above» – the elderly;
- there is a constant reduction in the difference in life expectancy between the sexes, between the city and the village, between individual ethnic groups and nationalities;
- the negative migration balance of the territory is formed as a result of the fact that the number of retiring persons over working age and lost ability to work for various reasons exceeds the arriving migration flows from persons of working age.

INDICATORS CHARACTERIZING SUSTAINABLE DEVELOPMENT

In Agenda 21, all countries and international organizations were encouraged to develop a concept for sustainable development indicators (sustainable development). And the coordination of works on the wide use of indicators of sustainable development should be carried out under the leadership of the Statistical Office of the UN Secretariat, as this Office accumulates new experience in this field (Report of the UN Conference, 1993, p. 505). The first set of indicators for sustainable development was recommended by the United Nations Commission on Sustainable Development in 1993, it included 132 indicators (Indicators of Sustainable, 1994). The set proposed by the concept of sustainable development of the United Nations is not mandatory and is not based on a single statistical database. It is intended to provide a common starting point for the development of national sets of indicators for sustainable development. The measurement of sustainable development has developed in three main areas: complex indicators, indicator sets and satellite accounts (satellite accounts - an instrument for further analysis of certain important aspects of the economic and social development of society based on the system of national accounts). An important criterion for the choice of sustainable development indicators is their compliance with the quality standards of official statistics (Conference of European, 2014, pp. 12, 15, 14, 133).

In the first set, all indicators are divided into three categories, taking into account their target orientation: indicators are the driving force that characterize human activity, processes and characteristics that affect sustainable development; state indicators characterizing the current state of various aspects of sustainable development; response indicators that allow for a political or some other response to change the current state. In the social block there are demographic indicators: population growth rate (%); rate migration (person/year); population density (person / sq. km.); birth rate increase; infant mortality per 1000 live births; life expectancy at birth; maternal mortality in childbirth by 1000 pregnant women; proportion of the population covered by primary care (%). The following are borderline with demographic indicators of sustainable development: the number of girls per 100 boys in high school; the number of women per 100 men among the employed; number of women of childbearing age who have access to discuss family planning issues (Hasan M., 1998 pp. 9-15).

In 2007, the UN publishes the report «Indicators of sustainable development: directions and methodology» in which two blocks with a set of demographic indicators are singled out. The block of health includes: the mortality rate of children under the age of five, life expectancy and life expectancy of a healthy life, suicide mortality, the incidence of diseases

such as HIV / AIDS, malaria, tuberculosis. Block demography: population growth rate, demographic load factor and total fertility rate. Demographic indicators include the number of deliberate murders per 100,000 people from the public administration block (Indicators of Sustainable, 2007).

Since 2008, there is an official list of Millennium Development Goal indicators. Among the indicators for monitoring and progress, there are demographic indicators: under-five mortality rate, infant mortality rate, maternal mortality rate, adolescent fertility rate, malaria and mortality rates, tuberculosis incidence rates, prevalence and mortality from tuberculosis (The Official List, 2008).

A significant contribution to the development of indicators of sustainable development was made by the Conference of European Statisticians. Three sets of indicators of sustainable development were proposed: a large set based on the conceptual classification (60 indicators), a large set based on the thematic classification (90 indicators) and a small set based on the thematic classification (24 indicators) (Conference of European, 2014, p. xv, 12, 13, 15, 77). The Organization for Economic Cooperation and Development (OECD) has developed a system of 131 indicators, which assess the position of Western countries in achieving these goals (Measuring Distance, 2017, pp. 24-30).

The set of indicators of sustainable development in Russia was approved by the Order of the Government of the Russian Federation, according to which the Federal Statistical Work Plan was supplemented with the subsection «Indicators of achievement of the sustainable development goals of the Russian Federation». The sub-section includes 90 indicators of achievement of sustainable development goals in the Russian Federation (Order, 2017).

For comparative analysis at the interstate and in-country level, all indicators must meet certain criteria:

1. *Relevance to the goals of sustainable development.* Each group of indicators should reflect all the most significant aspects of the demographic development of a country or individual territories and be related to sustainable development. Demographic indicators should characterize both the natural and migratory movement of the population, as well as the composition of the population in terms of imbalances that may lead to a reduction in sustainable development.

2. *Non-redundancy.* The set of demographic indicators should correspond to the methodological principle of W. Occam: «You should not introduce new entities without extreme need». Indicators should not duplicate the semantic load of each other, characterize certain processes.

3. *Availability.* The reliable values of all statistical indicators or the results of sociological research necessary to determine the values of indicators should be available.

4. *Accounting for international and Russian experience.* To ensure comparability with the results of international studies, it is necessary to apply those indicators that have already been successfully used by major international organizations that study sustainable development.

DEMOGRAPHIC INDICATORS IN THE SYSTEM OF INDICATORS OF INTERNATIONAL ORGANIZATIONS AND RUSSIA

Currently, demographic indicators are presented in the basic systems of indicators of sustainable development. They are most fully reflected in the system of global indicators UN - 16 (Global indicator, 2016). OECD recommended 12 indicators (Measuring Distance, 2017, p. 24). One less for the assessment of sustainable development uses the World Bank – 11 indicators (World Development, 2017). Ten indicators are used by the Interstate Statistical Committee of the Commonwealth of Independent States (List of indicators, 2016). The Russian Federation included nine indicators in its list (Order, 2017). And only six indicators for the measurement of sustainable development were recommended by the conference of European statisticians (Conference of European, pp. 83-85). All demographic indicators of sustainable development are presented in Table. 1.

Table 1. Demographic indicators of sustainable development used by international organizations and Russia.

Code	Indicator	Indicator system					
		UN 2016	WB 2017	OECD 2017	CIS 2016	RF 2017	CES 2014
	Population size						+
3.2.3	Low birthweight			+			
3.7.1	Proportion of women of reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods	+	+ ¹		+	+ ²	
3.7.2	Adolescent birth rate (aged 10–14 years; aged 15–19 years) per 1,000 women in that age group	+	+ ³	+	+	+	
3.1.1	Maternal mortality ratio	+	+	+	+	+	
3.2.1	Under-5 mortality rate	+	+ ⁴	+	+	+	
3.2.2	Neonatal mortality rate	+	+	+	+	+	
3.4.1	Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease	+	+ ⁵		+	+	
3.4.1	Premature mortality (potential years of life lost)			+			
3.4.2	Suicide mortality rate	+	+	+	+	+	+
3.6.1	Death rate due to road traffic injuries	+	+	+ ⁶	+	+	
3.9.1	Mortality rate attributed to household and ambient air pollution	+		+			
3.9.2	Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All services)	+		+			

3.9.3	Mortality rate attributed to unintentional poisoning	+		+			
11.5.1	Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population	+					
16.1.1	Number of victims of intentional homicide per 100,000 population, by sex and age	+	+	+ ⁷	+ ⁸		+ ⁹
16.1.2	Conflict-related deaths per 100,000 population, by sex, age and cause	+	+		+ ⁸		
	Life expectancy at birth						+
	Healthy life expectancy at birth						+
5.3.1	Proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18	+	+ ¹⁰			+	
10.7.2	Number of countries that have implemented wellmanaged migration policies	+					
	Migration of human capital						+

1) the percentage of married women,

2) from 18 to 44,

3) from the age of 15 to 19,

4) by sex,

5) between 30 and 70,

6) deaths from traffic accidents,

7) deaths from attacks,

8) by sex, age and cause,

9) percent of deaths due to violence / murder,

10) married before age 18.

As we can see, only one indicator has a cross-cutting value: the death rate from suicide. If we exclude from the analysis the indicators of the conference of European statisticians, there will be five cross-cutting indicators. At the same time, it should be noted that of the six indicators recommended by the conference of European statisticians, four have their own exclusivity. Particularly noteworthy are two: the migration of human capital and life expectancy at birth, including a healthy life.

The indicator of migration is important because when people migrate or temporarily move to other countries, their human capital (education, health) also moves. On the one hand, migration reduces the stock of human capital in the country of origin, but on the other hand, it generates remittances and creates work experience that will benefit the country of origin when migrants return home (Conference of European, 2014, p.24).

Analyzing the presented systems of sustainable development indicators, it can be noted that their common disadvantage is that mortality rates prevail in them and other indicators of demographic stability are ignored (birth rate, population composition, migration) are ignored. This circumstance prompted us to offer our own set of demographic indicators.

METHODOLOGY FOR CALCULATING THE INDEX OF SUSTAINABLE DEVELOPMENT BY DEMOGRAPHIC INDICATORS

At the first stage, four demographic factors were chosen (birth rate, life expectancy, migration and age and sex composition of the population), and a basic list of indicators for each factor was determined in accordance with the goals of sustainable development and the specific demographic situation in the northern regions of Russia.

The group of fertility indicators is aimed at realizing the goal of sustainable development of the UN «good health and well-being». The main indicator of the birth rate is the total fertility rate, which shows how many children an average woman would give birth during the entire reproductive period (15-49 years) with constant age-specific fertility rates. Since this indicator does not depend on the age structure of the population, it can be used to compare different territories and for analysis in dynamics. For Demographic sustainability, the total fertility rate should exceed the level of simple replacement of generations (about 2.1 children born per woman), in which the population does not decrease from generation to generation. From the regions of the North in 2015, this level was achieved in all four autonomous regions, as well as in the Sakha and Tuva. In the latter, it is so high (3.4) that fertility can already cause negative social consequences. Therefore, the second birth rate was the proportion of live births among women who were not married in the total number of births, which should be sought to minimize, like the third indicator - the number of abortions per 1000 women in their reproductive years.

The life expectancy group contributes to achieving the goals of sustainable development «good health and well-being» and «gender equality». According to the Program of Action adopted at the 1994 International Cairo Conference, all countries should strive to ensure that in 2005 the life expectancy by 2015 exceeds 75 years. (Fauzer, Lytkina, Fauzer, Matlakh, 2015, p. 136). In 2015, none of the northern regions of the Russian Federation has reached this level. Most of all, the Khanty- Mansiysk Autonomous Okrug approached him (72.6). However, in nine northern regions, the life expectancy of women exceeds 75 years. Therefore, the difference in the expected life expectancy of men and women, which should be minimized, is chosen as the second death rate. The third indicator is infant mortality, which also reflects the degree of development of health care and the quality of life of mothers. The fourth indicator is the death rate from external causes. High mortality from external causes (murders, suicides, accidents) indicates a lack of development of society, a low standard of living.

The group of migration indicators pursues the goals of sustainable development «decent work and economic growth» and «reduction of inequality». The first indicator of migration is the coefficient of migration growth. The more the region is attractive to migrants, the more opportunities it offers for a comfortable life and self-realization. In 2015, out of all the northern regions, migration growth was observed only in the Nenets Autonomous Okrug. The migration loss of the population is a danger for the Northern Urals. The second indicator is the coefficient of migration growth of the working-age population. It characterizes the migration of labor with other regions and countries. The migration outflow of the able-bodied population can lead to an increase in the demographic burden and deterioration of the social status of the territory. The third indicator of the group is the coefficient of migration growth of the population with a professional education.

The group of population indicators by sex and age implements the goals of sustainable development «decent work and economic growth» and «reduction of inequality». The first two indicators are the coefficient of demographic burden by persons over working age and the proportion of persons of working age in the total population. The reduction in the proportion of the working-age population, observed today in Russia, is the inevitable result of an increase in the standard of living standards and the birth rate. The population of most regions of the North can no longer be characterized as young. On the scale of the demographic aging of the United Nations, the age structure of the population of nine of the 13 northern regions of the Russian Federation can be defined as old (the share of the population aged 65 and over exceeds 7%), three more as being on the verge of old age (from 4 to 7%) and only in the Yamalo-Nenets Autonomous Okrug has a young population (2.8%). The growth of the demographic burden leads to a decrease in the gross product per capita, a slowdown in the growth of incomes of the population. In the North, the highest burden of young people in 2015 was recorded in Tuva (617), and the lowest in the Murmansk Oblast. (300). The greatest burden of the elderly is in Karelia today (464), and the lowest is in the Yamalo-Nenets Autonomous Okrug (151). The third indicator characterizes the ratio of the sexes, namely women per 1000 men in the population.

The higher the inequality in the number of men and women, the more it can cause problems in the marriage market. In 2015, the largest disproportions in the North were recorded in Karelia (1193 women per 1000 men).

According to a survey of 26 experts in the field of demography and regional economics from Russian scientific organizations, each factor and indicator gained its weight, Table. 2.

Table 2. Demographic factors and indicators of sustainable development, their weight according to experts (2017).

Demographic factors	Impact on sustainable development, factor value	Demographic indicator	Impact on sustainable development, weight of the indicator
Fertility	0.255	total fertility rate	0.462
		share of live births among women who were not in registered marriage, in the total number of born	0.287
		number of abortions per 1000 women in reproductive age	0.251
Life expectancy	0.253	life expectancy at birth, years	0.289
		infant mortality rate	0.256
		difference in life expectancy between men and women, years	0.242
		death rate from external causes	0.213

Migration	0.243	net migration rates	0.361
		net migration rates of the working-age population	0.343
		net migration rates with a vocational education	0.296
Sex and age composition of the population	0.249	proportion of persons at working age in the total population	0.370
		factor of demographic burden by persons over working age	0.332
		women per 1000 men in the population	0.298

Table 3. Ranking of northern regions by the degree of sustainable development by demographic indicators for 2000-2015.

Degree of demographic sustainability	2000	2005	2010	2015
62-69 high		↑ Khanty-Mansi AO ↑ Yamalo-Nenets AO	Khanty-Mansi AO Yamalo-Nenets AO	Khanty-Mansi AO
54-61 medium	Khanty-Mansi AO Yamalo-Nenets AO		↑ Nenets AO ↑ Murmansk Oblast ↑ Sakha Republic ↑ Kamchatka Krai	↓ Yamalo-Nenets AO Nenets AO Murmansk Oblast Sakha Republic Kamchatka Krai
46-53 low	Komi Republic Nenets AO Murmansk Oblast Sakha Republic Kamchatka Krai Sakhalin Oblast	Komi Republic Nenets AO Murmansk Oblast Sakha Republic Kamchatka Krai ↑ Magadan Oblast ↑ Chukotka AO	Komi Republic ↑ Republic of Karelia ↑ Arkhangelsk Oblast ↑ Tuva Republic ↑ Sakhalin Oblast Magadan Oblast Chukotka AO	Komi Republic Republic of Karelia Arkhangelsk Oblast Tuva Republic Sakhalin Oblast Magadan Oblast Chukotka AO
38-45 critical	Republic of Karelia Arkhangelsk Oblast Tuva Republic Chukotka AO Magadan Oblast	Republic of Karelia Arkhangelsk Oblast Tuva Republic ↓ Sakhalin Oblast		

↓ is regions that have worsened their situation, ↑ is regions that have improved their situation.

At the second stage, the developed system of indicators was used to assess the sustainability of the regions of the Russian North. The subject of the Russian Federation with the

best value of the indicator for the entire period (2000-2015) was assigned 100 points, and with the worst one - 1 point. All northern regions received values on a line from 1 to 100 using the linear scaling method based on extreme values. This allows us to take into account the extent to which the regions lag behind the leading ones. Then the values of the regions were determined according to the groups of indicators corresponding to four factors, as the arithmetic mean of the weighted scores of all the indicators included in the group. Similarly, the final index was calculated based on the mean values for the four factors. All values were rounded up to integers. The maximum possible value of the index is 100 points and can be achieved only if the subject of the Russian Federation is the Russian leader by all indicators included in the index. The minimum possible index is one.

Further, integral indices were calculated; the range of their variation is determined as the difference between the largest and the smallest value of the trait in the studied population in four years. The difference between the polar values (38-69) was divided into equal four intervals, as in the first approach. Then, by the size of the integral index, all the northern regions were ranked according to the degree of sustainable development by demographic indicators, Table. 3.

The degree of sustainable development in the critical group in 2000 fell: Arkhangelsk Oblast (41), Republic of Karelia (41) and Tuva Republic (38), Magadan Oblast (45) and the Chukotka Autonomous Okrug (40). In 2015, there were no subjects with a critical level of sustainable development. For all the years, the Komi Republic (46-50) and the Sakhalin Oblast (46-51) had a low level of stability (with the exception of 2005 - 45). The best indicators of sustainability are demonstrated by the Yamalo-Nenets Autonomous Okrug (59-63) and Khanty-Mansi Autonomous Okrug (61-66) (see Table 4).

Table 4. Indices of sustainable development in the Russian northern regions, calculated by demographic indicators, 2000-2015.

Territory	Degree of demographic sustainability		including:							
			fertility		life expectancy		migration		sex and age composition	
	2000	2015	2000	2015	2000	2015	2000	2015	2000	2015
Russian Federation	43	53	33	57	49	73	53	53	36	27
Northern subjects of the Russian Federation	49	55	31	56	48	70	48	43	68	49
Khanty-Mansi AO	61	65	34	62	56	79	64	50	91	68
Yamalo-Nenets AO	59	61	36	62	59	76	52	21	91	85
Nenets AO	47	59	34	61	30	68	57	56	69	52
Kamchatka Krai	50	57	28	56	51	67	40	43	80	63
Murmansk Oblast	51	55	36	56	54	71	39	43	76	47

Sakha Republic	48	55	35	52	47	69	44	44	68	55
Chukotka AO	40	53	33	50	37	58	10	32	81	71
Sakhalin Oblast	46	51	25	51	47	64	42	48	69	42
Komi Republic	46	50	28	55	48	66	44	37	64	41
Tuva Republic	38	50	30	60	20	51	50	43	51	46
Magadan Oblast	45	50	25	43	40	69	28	36	87	53
Republic of Karelia	41	47	29	53	42	66	53	49	41	19
Arkhangelsk Oblast	41	47	27	52	43	69	46	42	48	26
Arctic Subjects of the Russian Federation	53	57	36	58	54	73	43	34	81	63

In the northern regions in all the years under review, sustainable development was higher than the Russian level: in 2000 this ratio was 49/43, in 2015 - 55/53, as we see this advantage cannot be reduced to anything. It can be explained by two factors: firstly, migrations outflow, and secondly, a reduction in the gap in age and age indicators. In 2015, the value of the «migration» index for the North was 43, and in Russia - 53. The advantage in sustainable development to the northern regions was provided by the “sex and age structure of the population” - 49/27. It can also be noted that the regions that are fully part of the Arctic zone of Russia have a higher level of sustainable development.

CONCLUSION

Theoretical and practical steps to study sustainable development already have their own history. First attempts are made to per iodize sustainable development: according to documents adopted by the UN; on the ongoing conferences; on published reports and monographs. Since the first RIO-92 conference, attention is drawn to the need to study the links between demographic trends and sustainable development factors.

Since 2016, following the adoption of Agenda 2030, the UN has begun to systematically monitor the implementation of 17 goals, and the results are published in the annual Reports (The Sustainable, 2017).

In conclusion, it can be noted that the ranking of northern regions in terms of the degree of sustainable development based on demographic indicators reveals the development of society from a social critical point, and this provides a new tool for managing the sustainable development of regions.

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