

SOCIAL AND ECONOMIC DEVELOPMENT

UDC [338.22: 331.522](985)(045)

DOI: 10.17238/issn2221-2698.2019.36.5

The role of labor potential in the sustainable development of the Russian Arctic *

© Elena A. KORCHAK, Cand. Sci. (Econ.), senior researcher

E-mail: elenakorchak@mail.ru

Luzin Institute for Economic Studies, the Federal Research Centre “Kola Science Centre of the Russian Academy of Sciences”, Apatity, Russia

Abstract. The key to the effective development of the Arctic resources is the active development of elements of the socio-economic systems of the Arctic territories. The progress in their use will provide a synergistic effect in the implementation of the full range of development priorities of the Arctic zone. One of these elements is labor potential, able to confront challenges in the Arctic effectively. Modern problems of the development of the labor potential of the Arctic territories are population decline, disruption of population reproduction processes, the low life expectancy of men and native people, social tensions in labor markets, and poverty. The provisions and conclusions of the presented study contain a scientifically substantiated position regarding the role of labor potential in the sustainable development of the Arctic territories of Russia. The research results are focused on their use for managing the development of the labor potential of the Arctic territories. Prospects for the further research of this topic are related to the study of the scientific foundations of the territorial self-development in achieving sustainable development of the Arctic territories of Russia.

Keywords: *labor potential, the Arctic region, sustainable development, labor market, the standard of living, demographic situation, unemployment, social licensing.*

Introduction

The priority of Russian society is the sustainable development of the country. The leading role in achieving it is for the Arctic territories. In the Arctic, social development is particularly important due to a series of factors. The mineral and fuel-energy resources of the Arctic territories play a crucial role in meeting the needs of the national economy for strategic commodities. The use of labor requires an approach due to climatic tension, creating discomfort for living in the Arctic: the nature effects intensity serves to prolong the adaptation properties of the human organism, cold discomfort, specific northern diseases, and aging of the body. The variability of settlement, territorial remoteness, small numbers of remote settlements, limited areas of labor application, low levels of transport availability contribute to the increased resource intensity of life in the Arctic. Despite the importance of the Arctic, it's a sparsely populated macro-region and remains a problem area in Russia due to the complexity and heterogeneity of socio-economic development and the lack of scientifically sound territorial management. We noted a need to develop new approaches for the development of the Arctic and to transform the state regulation of its development. The new Arctic paradigm should be sustainable development with the goal of integrated

* For citation:

Korchak E.A. The role of labor potential in the sustainable development of the Russian Arctic. *Arktika i Sever* [Arctic and North], 2019, no. 36, pp. 5–23. DOI: 10.17238/issn2221-2698.2019.36.5

resource development and a focus on the social dimension. Labor capacity plays a crucial role in such development.

***Labor potential is a systemically important factor
for territorial socio-economic systems***

Different approaches are used to determine the concept of labor potential. The prevailing is the idea that the labor potential of the region is realized at the expense of knowledge, experience, and professional competencies [1, Tsvetkova I.I.] ability of the able-bodied population to productive activity. The efficiency of such ability determines the level of labor productivity [2, Tretyakov L.A., Bessonova M.A., Trofimenko E.N.] and depends on quantitative (determined by demographic factors [3, Zaitseva I.V.]) and qualitative (determined by the level of socio-economic development) characteristics of the labor potential of the area.

Analysis of economic and sociological categories of labor [4, Corchak E.A.] shows labor potential is an integral part of the human potential, i.e., a social category that characterizes the population as a subject of social, territorial development [5, Istomin A.V., Selin V.S.]. The basis of labor capacity is a part of the people with the ability to work, whose degree of realization determines the pace and proportion of territorial socio-economic development and the level of human development of the region [6, Vorobyev A.A.].

Thus, the potential for economic activity is the social factor of territorial development, and territorial specificities shape its quantitative and qualitative characteristics and determine the level of sustainability of the area. Quantitative attributes of labor potential are measured based on statistics (population censuses, sample surveys of the labor force, employment, and unemployment [7, Popova L.A., Terentyeva M.A.]). Qualitative characteristics are formed under the influence of demographic processes [8, Terentyeva M.A.] and are determined by the social infrastructure, living standards [9, Yarasheva A.V., Makar S.V.] and functional specifics of the Arctic areas [10, Teslya A.B., Bulacheva L.V.].

Medic and demographic factors of the Arctic labor potential of Russia

Demographic processes [11, Samarina V., Skufina T. & Samarin A.] play a significant role in providing real opportunities for the generation of labor. Analysis of the medical and demographic situation (2005–2017) shows the threats to real development opportunities of the labor potential in Arctic Russia¹ [12, Revich B.A., Kharkova T.L., Kvasha E.A., Bogoyavlensky D.D., Korovkin A.G., Korolev I.B.]. Such threats include the reduction of the able-bodied population (i.e., the basis of the labor force), the migration loss of the population [13, Schmidt J., Aanesen M., Klovov K., Khrutshev S., and Hausner V.], high morbidity and mortality rates among able-bodied men and high infant mortality.

¹ Territories completely classified a part of the Arctic Russia have been selected an object of the study.

A trend of demographic development of Arctic Russia (Fig. 1) is the shift of demographic equilibrium in the direction of increasing the population older than working age and manifestation of feminization with an increase in age (starting from the age group 40–44 years): the proportion of the able-bodied population there was 61.2% against 68% in 2005.

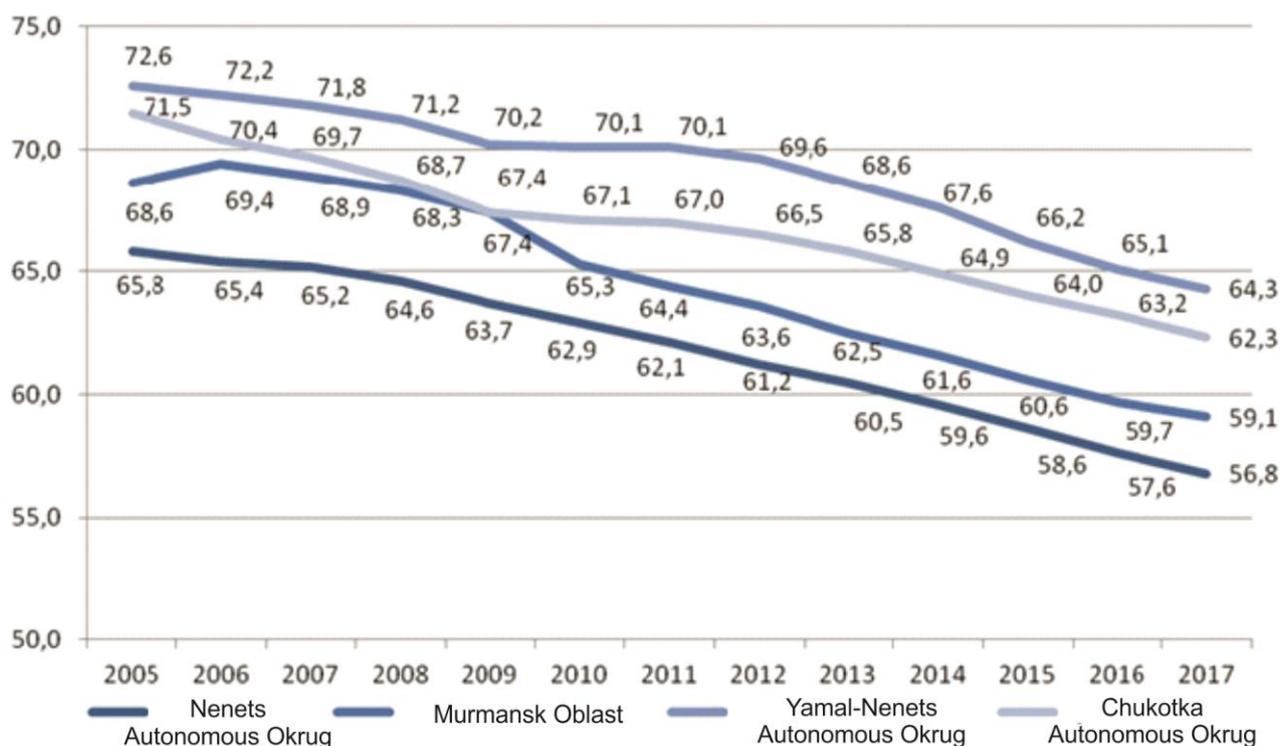


Fig. 1. Trends in the ratio of the able-bodied people in the Arctic territories of the Russian Federation, 2005–2017, % of the total population².

A prime example is the Murmansk Oblast, where against the background of a significant population decrease (2005–2017: by 85 thousand people or 10.1%), the share of the able-bodied population was 59.1% against 68.6% in 2005. The migration issue is acute in the area: in 2005–2017, 75.4 thousand people left the area. The situation is harmful to the development of the Arctic labor force due to the high proportion of skilled workers in the migration structure (in 2017, 57.2% of the population aged 14 and over were qualified). No doubt, such trends limit the possibilities of exploiting the labor potential of the Arctic territories.

Factors with a negative impact on the labor force development in the Arctic are the high rate of morbidity, i.e., a cause of concern due to disability and mortality, and the high rates of able-bodied population and infant mortality. E.g., the rate of morbidity per 1,000 people (patients with first-time diagnoses) in the RF Arctic territories in 2017 was 1,015.9 against the mid-Russian level — 778.9. Respiratory diseases are among common ones: in 2017, the rates in the Chukotsky AO — 771.8, in the Nenets AO — 702.7, in the Yamal-Nenets AO — 625.3, against an average of 353.5 in Russia. The average Russian value significantly was exceeded by the level of the digestive

² Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli [Territories of Russia. Socio-economic indicators]. URL: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138623506156 (accessed 18 May 2019). (In Russ.)

system and musculoskeletal system diseases (e.g., in 2017, in the Nenets AO the incidence rate of digestive organs diseases amounted to 82.9 against 34 — the average in Russia, in the Yamal-Nenets AO — 64.4, in the Chukotsky AO — 60.2).

Such specific features of medical and demographic indicators in the Arctic territories of Russia are caused by the discomfort of living, incl. climatic conditions, the state of the environment, the ethnic component of human potential, and the functional features of Arctic settlements. E.g., in the Murmansk Oblast (urban enterprises are responsible for up to 70% of pollutant emissions), Monchegorsk and Kola area are the places³ with high incidence rates of endocrine diseases among children under 14 years. It is more than 1.5 times the Murmansk Oblast's average. Mentioned territories are the area of the Kola Mining and Metallurgical Company production activities. Sulfur dioxide in the air of such settlements exceeds the norm by two times. In high water time, it was recorded that the rates of nickel exceeded in drinking water. A settlement with high rates of morbidity of children under 14 years caused by the musculoskeletal system diseases and congenital anomalies is Kirovsk, where the Kirov branch of JSC "Apatit" operates. The dumps of the "tailings" of the enterprise are the primary source of pollution of the environment with dust (winds from the side of the enterprise to the residential sides of the Apatitsko-Kirovsky area create increased concentrations of polluting substances in the air). The Murmansk Oblast is exposed to the dangers of radioactive contamination more than other territories of Russia: more than 200 nuclear reactors, a significant amount of radioactive waste and spent nuclear fuel are on the land of the Kola area⁴.

In the Yamal-Nenets AO, the industrial facilities of New Urengoi, Nadym, and Notoxar contribute significantly to the regional incidence of disease⁵ (esp. neoplasm). The number of air pollutant substances include sulfur dioxide, oxides of nitrogen and carbon, formaldehyde, benzopyrene. In terms of the incidence of malignant neoplasms, the industrial settlements of Salekhard, Gubkinsky, Noyabrsk, and Purovsky, Shurishkarsky, and Tazovsky areas are at risk.

Another example is Chukotka, where the high infant mortality rate was recorded (in 2017: 10.7%) and the lowest life expectancy at birth (the total population — 66,10 years, men 60.33).

³ Mediko-demograficheskie pokazateli i sanitarno-epidemiologicheskaya obstanovka v Murmanskoy oblasti v 2016 godu. Upravlenie Federal'noy sluzhby po nadzoru v sfere zashchity prav potrebiteley i blagopoluchiya cheloveka po Murmanskoy oblasti [Medical and demographic indicators and the health and epidemiological situation in the Murmansk Oblast in 2016. Office of the Federal Service for the Supervision of Consumer Protection and Human Welfare in the Murmansk Oblast]. URL: [http://51.rospotrebnadzor.ru/directions _of _ activity/social _hygienic _monitoring/](http://51.rospotrebnadzor.ru/directions/_of_activity/social_hygienic_monitoring/) (accessed 09 April 2018). (In Russ.)

⁴ Osobennosti zagryazneniya. Federal'noe gosudarstvennoe byudzhethnoe uchrezhdenie «Murmanskoe upravlenie po gidrometeorologii i monitoringu okruzhayushchey sredy» [Features of pollution. Federal State Budget Institution "Murmansk Hydrometeorology and Environmental Monitoring Authority"]. URL: <http://www.kolgimet.ru/monitoring-zagryazneniya-okruzhayushchey-sredy/centr-monitoringa-zagryazneniya-okruzhayushchey-sredy/osobennosti-zagryazneniya/> (accessed 18 May 2019). (In Russ.)

⁵ Neinfektsionnaya zabolevaemost' naseleniya Yamalo-Nenetskogo avtonomnogo okruga v 2016 godu. Upravlenie Federal'noy sluzhby po nadzoru v sfere zashchity prav potrebiteley i blagopoluchiya cheloveka po Yamalo-Nenetskomu avtonomnomu okrugu [Non-communicable diseases in the Yamal-Nenets Autonomous Okrug in 2016. Office of the Federal Service for the Supervision of Consumer Protection and Human Welfare of the Yamal-Nenets Autonomous Okrug]. URL: <http://89.rospotbnadzor.ru/s/89/files/decisions/monitoring/146492.pdf/> (accessed 18 May 2019). (In Russ.)

Due to ethnic characteristics of the population, among the specific features of the medical and demographic situation in the Okrug, we should note a high proportion of the rural population (30%), a high level of morbidity from “injuries, poisoning, external causes” (110.1 cases per 1,000 people in 2017), high levels of mortality from external causes (222.3 cases per 100 thousand people in 2017) and mortality of the rural population (in 2017 — 14.2% against 7.4% among the urban population).

Territorial organization of social infrastructure in the Arctic territories of Russia

Equally important factor of labor potential development in the Arctic Russia is its social infrastructure (social organizations and institutions serving basic social needs of the population, i.e., education of children, housing, medical support, cultural and sports leisure, etc.) [14, Markin V.V., Silin A.N.] and transport accessibility, forming “household” attractiveness of the Arctic territories [15, Ivanova M., Klyukina E.S.]. An analysis of the social infrastructure of the Russian Arctic shows threats in providing real opportunities for its labor potential development. Thus, obstacles to the educational needs of children and teenagers are caused by an unsatisfactory state of educational institutions (incl. their equipment) and an imbalance in the supply and demand of pre-school education services, manifested in the incomplete coverage of children with such services. Of relevance is the shortage of places in preschool institutions for children under three years old and the availability of preschool facilities for children belonging to small native peoples. E.g., in the Nenets AO, preschool enrollment is only 78%, and no supplementary education was organized in rural areas. In Salekhard (the Yamal-Nenets AO), 33,5% of children attend schools. In the town of Gubkinsky, the number is 29,5%.

The poor state of the housing and public infrastructure is increasing the localization of morbidity and mortality in the Arctic territories. In the Yamal-Nenets AO, e.g., non-communicable diseases are caused⁶ by the poor state of a centralized water supply system: in drinking water, hygienic standards of iron and manganese content are significantly exceeded; water treatment facilities in Tarko-Salé and Noyabrsk are ineffective. In the Nadym district, operated drinking water pipes do not have the necessary treatment facilities. The Shuryshkar district has no domestic drinking water pipes, and the town of Labytnangi got water pipes to supply with untreated and undisinfecting water. In the Chukotsky AO, more than 19% of the population are not provided with quality drinking water, and more than 40% of rural settlements have no piped water.

Housing conditions play an essential role in the qualitative and quantitative characteristics of the labor potential of the Arctic territories. E.g., according to Rosstat, 8.2% of families in Arctic Russia need to improve housing conditions (15.3% in the Nenets AO); 5.9% of the housing is in an emergency and dilapidated state. In the Yamal-Nenets AO, this number reaches 11.8%. Housing problems are affecting people's migration interests rather than income.

⁶ Ibid.

The quantitative characteristics of the Arctic labor potential (e.g., unemployment and territorial differentiation, level of employment, etc.) are negatively affected by the “transport discrimination,” i.e., the minimal transport connectivity and the isolation of the territories. E.g., in the Yamalo-Nenets AO, 67.7% of the population of the Priural'sky municipal district lives in settlements with no regular transport links to the administrative center; 46.7% — in the Tazovsky district; in the Chukotsky AO— 72.4%: in the Chykovsky district — 38.7%; in the Providensky city district — 35.1%; in Pevek — 25%; in the Bilibinsky district — 9.8% in Egvekinot; in the Murmansk Oblast: 6.3% — in the Tersky district and 4.65% — in the Lovozero district.

Standard of living in Arctic Russia

The threat to the labor potential qualitative characteristics in the Arctic is low standard of living of the population: 10.1% (2017; 14.4 % in 2005) of the people of Arctic Russia is in poverty: in the Murmansk Oblast — 12.6% (19.1%); the Nenets AO — 11.4% (9%); the Chukotsky AO — 9% (15.1%), the Yamalo-Nenets AO — 6.5% (8.4%). An analysis of the average and median level of the average per capita income shows that 60 % of the population is poor. In 2017, the average per capita monetary income of 70.5% of the people of the Murmansk Oblast was less than three values of the subsistence minimum; in the Nenets AO — 59.2%, the Chukotsky AO — 56.1%. The median income in the Murmansk Oblast was 80% of the average; in the Nenets AO — 74% and the Chukotsky AO — 76%.

The average per capita income in the first group (with the lowest incomes) in the Nenets AO amounted to 25.5% of the okrug average monetary income (2017); in the Yamal-Nenets AO — 26.5%, in the Chukotsky AO — 28.2%, in the Murmansk Oblast — 33.2%.

According to household sample surveys⁷, the level of subjective poverty (the proportion of households classified as inadequate) in 2017 was 62.5%, incl. 79% — in the Yamal-Nenets AO (area with the highest wages in the Russian Federation), 68.8% — in the Nenets AO, 51.3% — in the Murmansk Oblast, 47.8% — the Chukotsky AO. 5.3 % of households “had financial difficulties which prevented the payment of established payments for housing and utilities⁸” (17.4% of homes in the Chukotsky AO). In general, the indicators of poverty and the differentiation of the Arctic population by the level of average per capita monetary income are significantly higher than the most critical values [16, Glashiev V.V., and Lokosov V.V.]: In the Murmansk Oblast, the poverty rate exceeds its significant value (3%) by 4.2 times; in the Nenets AO — by 3.8; in the Chukotsky AO by 3; in Yamal-Nenets — by 2.2.

⁷ Dokhody, raskhody i potrebleniye domashnikh khozyaystv (po itogam vyborochnogo obsledovaniya byudzhetrov domashnikh khozyaystv): stat. sbornik [Household income, expenditure and consumption (based on sample survey of household budgets)]. Federal'naya sluzhba gosudarstvennoy statistiki [Federal State Statistics Service]. URL: http://www.gks.ru/bgd/regl/b18_101/Main.htm (accessed 24 April 2018). (In Russ.)

⁸ Dokhody, raskhody i potrebleniye domashnikh khozyaystv v 3 kvartale 2018 goda (po itogam vyborochnogo obsledovaniya byudzhetrov domashnikh khozyaystv): stat. sbornik [Household income, expenditure and consumption in the 3rd quarter of 2018 (based on sample household budget survey)]. Federal'naya sluzhba gosudarstvennoy statistiki [Stat. compendium. Federal Service of State Statistics]. Moscow, 2019. 103p. (In Russ.)

One of the leading indicators of a low standard of living in the high share of expenditure on food in total consumption expenditure. It indicates restrictions on household access to development resources. E.g., in the Chukotsky AO, the percentage of food expenditure in the general structure of consumer spending in 2017 was 40%, in the Nenets AO — 34%, and the Yamal-Nenets AO — 32.2% (Fig. 2).

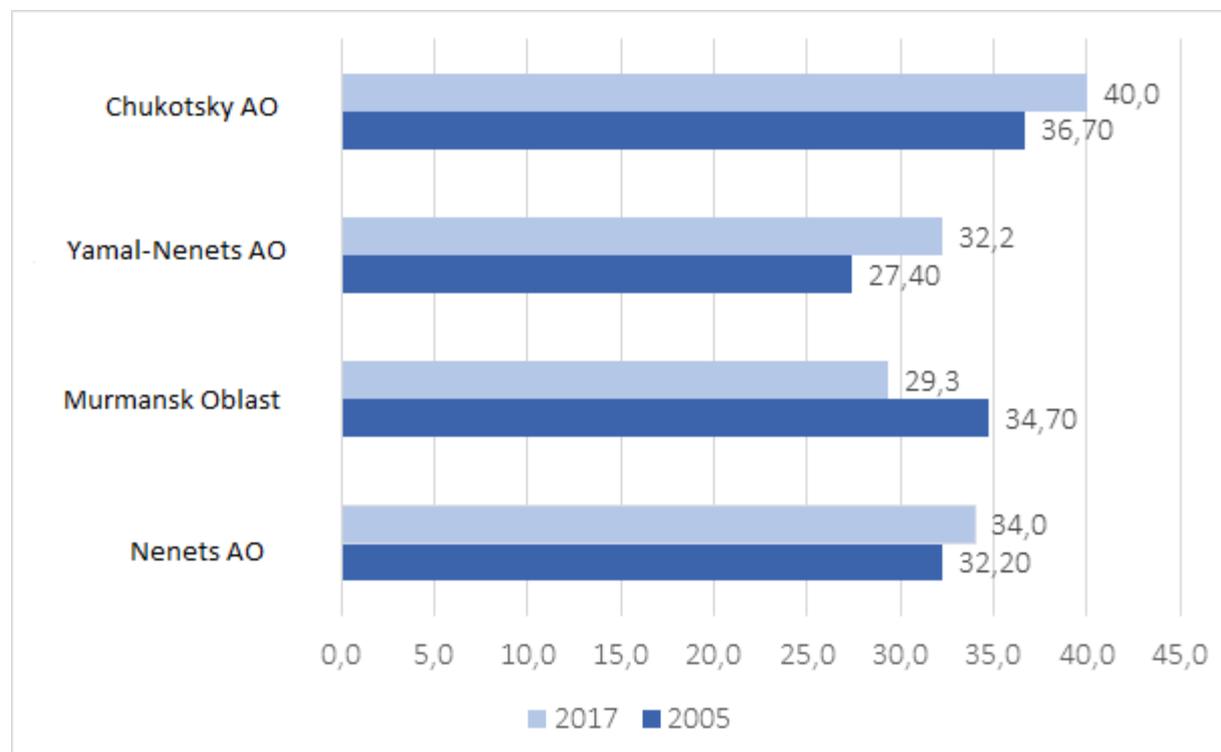


Fig. 2. Share of expenditure on food in total consumption expenditure in the Arctic areas of the Russian Federation, 2005 and 2017, %⁹.

In the Murmansk Oblast, the value of this indicator decreased in 2005-2017. It may be a positive trend in household well-being, but this conclusion is overshadowed by the rather bizarre situation of food composition. The Murmansk Oblast is entirely located in the Arctic zone of the Russian Federation, characterized by severe natural and climatic conditions and fish and mining-related specialties (i.e., a high proportion of male labor). However, the area is significantly inferior in the composition of nutrients in the consumed food to territories outside the Arctic zone (with more favorable natural and climatic conditions).

The systemic factor that determines the dynamics of socio-economic development of the Arctic territories in the strategic perspective is child poverty — the most important indicator of sustainable development. It has a significant impact on the quantitative and qualitative characteristics of the labor potential of Arctic Russia. This indicator is not visible in statistics. Thus, it is not considered by the government when forming social-political strategies. According to the author's calculations (Fig. 3), today, 20% of children in Arctic Russia are poor. The Murmansk Oblast is a part of the zone of high concentration of child poverty (27.5%).

⁹ Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli [Territories of Russia. Socio-economic indicators]. URL: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138623506156 (accessed 24 April 2018). (In Russ.)

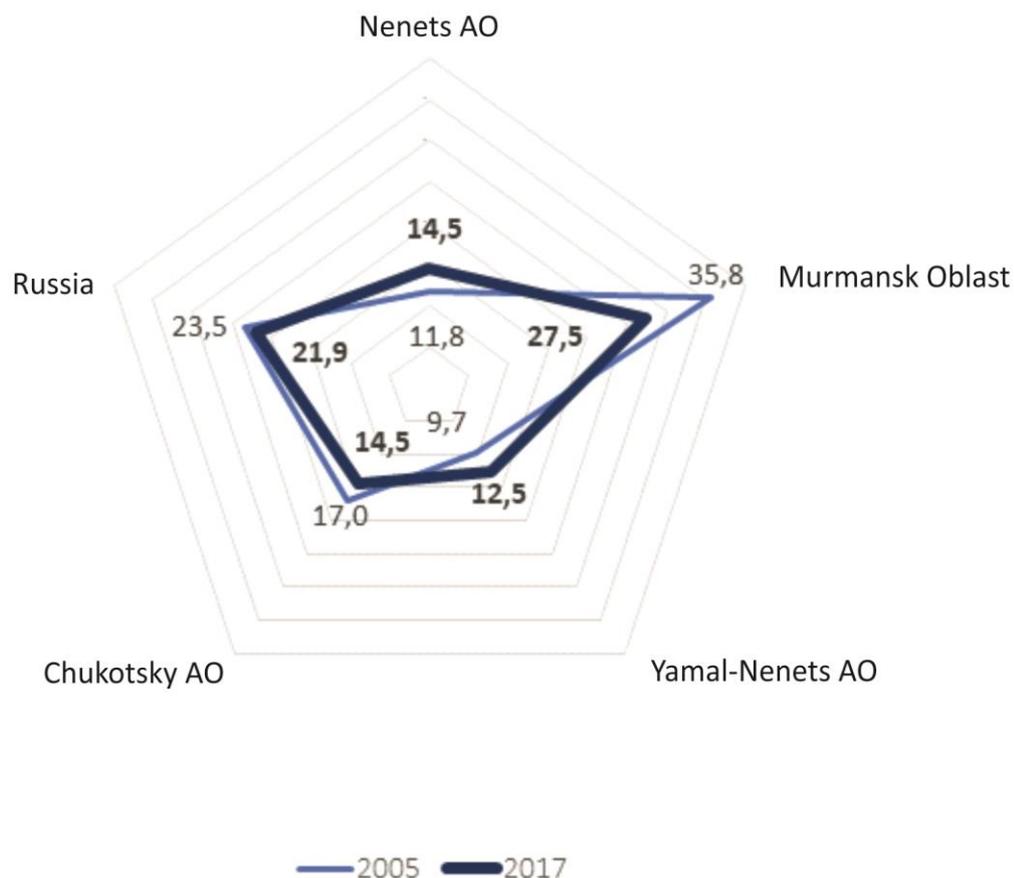


Fig. 3. Child poverty rates in the Arctic areas of the Russian Federation, 2005 and 2017, %.

Child poverty (i.e., the proportion of poor children in the total child population) occurs not only in families of unemployed people but also in families with working parents. The threat of child poverty concerning the Arctic labor potential means the risks of spreading morbidity, disability and mortality, reducing the level of education and raising the level of unemployment, declining living standards, rising crime, and social tensions, and reduced opportunities for economic growth.

Labor markets in Arctic Russia

The efficiency of territorial labor markets is central to the development of the Arctic labor potential. Its current state shows a fundamental contradiction between the strategic importance of the Russian Arctic and the negative processes in its socio-economic development. Despite high levels of population's economic activity in Arctic Russia, it is social tension in territorial labor markets caused by unemployment that negatively affects the labor potential development.

The level of unemployment was 6,1% in 2017. The primary characteristics of unemployment in the Arctic territories of Russia (Table 1) is the domination of young unemployed citizens (the average age of jobless citizens is 36.5 years, and the highest unemployment rate is in the 20-29 age group). One more typical feature is the high (63.3%) share of qualified citizens in the structure of the unemployed (we should note the tendency of increasing the share of skilled workers

among unemployed citizens). Also, we should admit the long-term nature of unemployment (almost a quarter of unemployed citizens were searching for a job for more than a year).

Table 1

*The main features of unemployment in the Arctic areas of Russia, 2005 and 2017*¹⁰

Indicator	Nenets Autonomous Okrug		Murmansk Oblast		Yamal-Nenets Autonomous Okrug		Chukotsky Autonomous Okrug	
	2005	2017	2005	2017	2005	2017	2005	2017
Average period of seeking employment, months	8.5	7.9	8.4	7.5	7.1	6.7	8.3	6.1
Unemployed persons seeking employment for 12 months or more, % of the total number of unemployed citizens	35.6	31.5	37.1	33.2	25.8	22.2	33.0	21.5
Proportion of unemployed skilled persons in the general structure of unemployed citizens, %	33.1	57.8	62.3	67.2	54.9	54.9	45.0	36.9

E.g., in the Murmansk Oblast and the Nenets AO, in 2005-2017, the proportion of skilled unemployed citizens increased with a slight decline in long-term unemployment. Also, it means the training systems of the region are inadequate and do not meet the demands of the local economies.

Social tensions in Arctic Russia's labor markets are exacerbated by the low employment, the high unemployment among graduates, and the high territorial differentiation of unemployment. E.g., one of the lowest employment rates in the Russian Federation (43%) was found in the Nenets AO, where 40% of the unemployed residents are rural citizens: the unemployment rate in the town of Anadyr is 0.2%. In the Chukotsky municipal district, the leading employers are the state and municipal institutions and agricultural enterprises. So, more than 70% of the unemployed are native people, i.e., 11.5% of the total in the area. In the Murmansk Oblast, 67.5 % of the unemployed residents are skilled, while the unemployment rate among graduates is 8.8%. The situation typical for the Murmansk Oblast: low demand for local graduates among the enterprises of the area. Graduates with secondary vocational education (colleges that interact with town-making enterprises) are more likely trained to work than persons with higher education who usually need mentoring¹¹. Only 28% of young people work in their field of study [17, Sharova E.N.]: against the background of the overabundance of lawyers, economists, and humanitarians, the greatest need of the Murmansk Oblast is made up of skilled personnel trained in ship repair, health care, housing, and construction. The rate of postgraduate migration from the Oblast is more than 30%.

The imbalance in demand and supply in the Arctic territorial labor markets is compounded by the employment of native people of the North. E.g., the employment native peoples of the

¹⁰Ibid.

¹¹ V Murmanskoy oblasti vozrozhdayut institut nastavnichestva [In the Murmansk Oblast, mentoring is being revived]. URL: <https://www.murman.ru/themes/economy-17042019.html> (accessed 18 May 2019). (In Russ.)

North in the Murmansk Oblast mean unskilled jobs in the peripheral sector of the local economy, i.e., reindeer husbandry. In the autonomous okrugs of the Russian Arctic, the unemployment of native peoples is seasonal, caused by the traditional use of natural resources (periodicity of such ethnic, economic activities as hunting and fishing). Common problems of native employment are narrow areas of labor application, reduction of jobs in traditional natural resources management, reducing the interest of young native people in regular economic activities.

The current problem of Arctic labor markets is low-paid employment. Within the modern system of state regulation of the Arctic labor potential development in the regions of Russia are institutional conditions aimed at preserving human efficiency, providing state guarantees for wages, considering the increased costs of working in the Arctic and social regulation. A critical analysis reveals significant shortcomings, which hurt the development of the labor potential of Arctic territories. These include the application of rules that do not guarantee accountability for the results and consequences of territorial and municipal governmental decisions, which do not guarantee the rights of citizens in social and labor relations. E.g., the salary of a nurse with the 3rd qualification grade in an institution subordinated to the Ministry of Health of the Murmansk Oblast is 35.8% of the minimum subsistence wage of able-bodied population (14 374 rubles); a doctor — anesthesiologist — resuscitator with a 4th qualification grade — 59.8%; a chief nurse of an outpatient health institution — 55%; the chief paramedic of the emergency medical service station — 61.4% (Table 2).

Table 2

*Salaries of employees of budgetary healthcare institutions by professional qualification groups in the Arctic areas of Russia, 2017*¹²

Indicator	Nenets Autonomous Okrug	Murmansk Oblast	Yamal-Nenets Autonomous Okrug	Chukotsky Autonomous Okrug
Mid-level medical and pharmaceutical personnel with a 3rd qualification grade	8 500	5 144	11 500	8 768
Doctors and pharmacutists with a 4th qualification grade	12 700	8 601	17 500	16 700
Heads of units at medical organizations with higher medical and pharmaceutical education and a 2nd qualification grade	17 000	9 480	18 700	17 535
Info: the minimum subsistence salary of the able-bodied population, rub.	21 664	14 374	16 569	20 600

In the Murmansk Oblast, the average monthly wage of employees at municipal pre-school institutions ranges from 28,016.3 rub, in the Kovdorsk area to 31,551.7 rub in the town of Apathy; in the Yamal-Nenets AO: from 42,632.4 rub in the Shurykarsk district to 50 988.7 rub in Noviy Urengoy; in Chukotsky AO: from 57 685.3 rub in Pevek up to 65 796 rub in Anadyr¹³.

¹² Elektronnyy fond pravovoy i normativno-tekhnicheskoy dokumentatsii [Electronic legal and regulatory documentation fund]. URL: <http://docs.cntd.ru/> (accessed 10 March 2019). (In Russ.)

¹³ Baza dannykh pokazateley munitsipal'nykh obrazovaniy. Federal'naya sluzhba gos. statistiki [Database of Municipal Indicators. Federal Service for Statistics]. URL: http://www.gks.ru/free_doc/new_site/bd_munst/munst.htm (accessed 01 April 2019). (In Russ.)

Low-paid employment, coupled with the local wage system in the Arctic territories (guarantees and compensation schemes for workers and residents of the Far North and their equivalent areas), adds to the phenomenon of economic poverty. On average, in Russian Arctic areas, the economic poverty level was 2.3%, incl. in the Nenets AO — 7.2%, in the Chukotsky AO — 2.4%, in the Murmansk Oblast — 2.2% and in the Yamal-Nenets AO — 2.1%. Arrears in wages exacerbate the situation concerning low-paid employment: In February 2019, the total amount of such debt¹⁴ in the Nenets AO was 35 million rub and in the Murmansk Oblast — 30 million rub.

Sustainable development of Russian Arctic territories

The contemporary paradigm of social development in the world is sustainable development, defined in the Sustainable Development Agenda as the result of the interaction of a human, economic system, and nature at the global, national, territorial, or local levels, and expressed in social, economic and environmental sustainability.

In Russia, the concept of sustainable development is based on an innovative model of economic growth (Concept of Long-term Socio-economic Development of the Russian Federation for the period up to 2020), considering the use of the Arctic zone of Russia as a strategic resource base of the country (Fundamentals of State Policy of the Russian Federation in the Arctic for the period up to 2020 and Further Perspective). In addition to the expansion of the Arctic resource base, among the goals of Russian State policy in the Arctic are the provision of favorable operational regime in the “Arctic region,” — protection of the Arctic environment, cooperation with the Arctic states, ensuring sustainable development of native peoples (the State Program of the Russian Federation “Socio-economic development of the Arctic zone of the Russian Federation”). Thus, the priority of sustainable development of the Arctic zone of the Russian Federation is its economic development. Its central principle is maximizing the efficiency of the use of mineral raw materials, fuel, and energy. Labor potential as a backbone factor of territorial socio-economic systems of Arctic territories of Russia is given a secondary role derived from economic problems. It does not meet the primary conditions for achieving sustainable development and ensuring the national security of the country. De facto, it is confirmed by the implicit predatory attitudes of large extractive industries and state corporations when Arctic resources are seized “for today's sake,” without “looking back” on not the only current social and economic situation in Arctic Russia, but on its future. First of all, this concerns the absence of rent relations regulation (rent payments for the use of natural resources) and social licensing (institutional management of mining rights with the involvement of the local community and minimizing the impact on the environment and biodi-

¹⁴ Prosrochennaya zadolzhennost' po zarabotnoy plate rabotnikam organizatsiy, ne otnosyashchikhsya k sub"ektam malogo predprinimatel'stva, po sub"ektam Rossiyskoy Federatsii v 2019 godu [Overdue wage arrears to employees of organizations not related to small businesses, by territories of the Russian Federation in 2019]. Federal Service for Statistics. URL: http://www.gks.ru/free_doc/new_site/population/track/sr-zarplata/t11.xlsx (accessed 13 March 2019). (In Russ.)

versity through all stages implementation of mining projects [19, Suopajärvi L., Ejdemo Th., Klyuchnikova E., Korchak E., Nygaard V., and Poelzer G.]).

An analysis of foreign experience in territorial management shows that the priority for the sustainable development of Arctic regions is their labor potential. In the North of America, institutional mechanisms for managing the labor potential growth in the Arctic areas are the institutions of corporate social responsibility (the scope of which is primary education, incl. the organization of baby food, sports, and leisure for the native people, etc.¹⁵) and social licensing in mining (its mechanism means the general vision of socio-economic development, diversification of local economies, and maximization of labor potential of the Arctic territories). E.g., in the subsidiaries of the “Dominion Diamond Mines” resource company, in 2017, the share of the employed population of the Northwest Territories and Nunavut (Canada) was 54% of the local people, incl. 18% of native people¹⁶. The company is an active participant in the Canadian system of certification of mining professions. It successfully implements mentoring programs among its production personnel, maintains partnerships with representatives of local Arctic communities (the Ekati mine contracts them for mining and catering services, blasting operations, transport, freight, and postal services). The specific of Alaska development is also related to the rent distribution: Revenues from the use of oil resources were initially directed to the development of production and social infrastructure facilities in oil-producing regions. The privatization of land and natural resources was accompanied by the creation of private-collective forms of ownership. Later, it has become the economic ground for local communities and social partnership of the state, business, and local communities. Norway has a high level of taxation on oil activities. The guiding principle for the exploitation of the oil and gas resources in the Arctic is that the works meet the requirements of the social consequences (e.g., the companies applying for the Finnmark).

The Arctic areas of Russia with a small population (1.64% of the total) play an essential role in the innovative national model of economic growth, i.e., they are donors for the federal budget. Their GRP share in the total country's GRP is more than 5%; the amount of GRP per capita is 2,348.8 thous rub against Russia's average of 510,2 thous rub. Despite it, the degree of socio-economic injustice in the Arctic areas is more pronounced. Thus, the population of the Arctic territories experiences inadequate economic compensation for work and living in extreme environmental conditions through wages and social transfers; tax bases of local budgets are reduced due to increased vertical integration of holdings, which include town-forming enterprises; the scarcity of municipal budgets and the high level of their subsidies limit the ability of local governments to participate in employment, its promotion, formation, and implementation of territorial development programs [18, Mitroshina M.N.].

¹⁵ Ekati Diamond Mine 2017 Socio-Economic Agreement Report. 38 p.

¹⁶ Local economic development RioTinto. URL: <https://www.riotinto.com/source/local-economic-development-24287.aspx> (accessed 09 October 2018).

Analysis of the conceptual foundations of sustainable development of territorial socio-economic systems [20, Manjeet K.; 21, Alvarez J., Yumashev D., Whiteman G.; 22, Newton St. T., Fast H., Henley Th.; 23, Jovovic R., Draskovic M., Delibasic M., and Jovovic M.] shows that the modern Arctic paradigm in Russia should be the sustainable development of its Arctic areas. It should be understood as a process of territorial expansion, determined by the long-term socio-economic policy of the state, formed based on a systematic interaction of state authorities, local governments, local business community, and population. It should be carried out on the principles of promoting rational socially-oriented nature management and maximum conservation of human potential through the formation of high welfare standards of the population, considering the specifics of the Arctic. The pace and proportion of sustainable development of the Russian Arctic are determined by an appropriate quality of labor potential, which in turn requires a useful model of its improvement as a systemically important factor in the territorial socio-economic systems.

Conclusion

Achieving sustainable development in the foreign Arctic areas involves, first and foremost, solving the problems of unemployment by maximizing the employment of the Arctic population through continuous interaction of significant employers with local school and vocational education systems and the wide dissemination of social licensing of extractive corporations. In our view, to achieve the sustainable development of Arctic Russia, it is necessary to refocus the development of the Arctic resources on their social importance by extending the institution of social licensing of resource companies based on the principles of social development. The social significance of resource-related activities is determined by optimizing the possibilities of territorial self-development, increasing the “domestic” attractiveness of the Arctic territories, and, ultimately, developing the labor potential of the Arctic areas of Russia.

Acknowledgments and funding

The author expresses his gratitude for valuable advice in the preparation of the article to Skufyina T. P. — Doctor of Economics, Professor, Chief Researcher at Luzin Institute for Economic Studies, the Federal Research Centre “Kola Science Centre of the Russian Academy of Sciences”, Apatity, Russia. The article includes materials of the R&D project AAAA-A18-118051590115-9 “Social aspects of managing the self-development of territories and local communities in the Russian Arctic” (governmental assignment for FRC KSC RAS).

References

1. Tsvetkova I.I. Osnovnye printsipy razvitiya trudovogo potentsiala regiona [Basic principles for the development of the labor potential of the region]. *Ekonomika i upravlenie* [Economy and Management], 2012, no. 3, pp. 41–46. (In Russ.)
2. Tret'yakova L.A., Bessonova M.A., Trofimenko E.N. Sushchnost' kategorii «trudovoy potentsial»: sotsial'no-ekonomicheskiy aspekt [The essence of the category “labor potential”: socio-economic aspect]. *Regional'naya ekonomika: teoriya i praktika* [Regional economy: theory and practice], 2014, no. 34 (361), pp. 2–10. (In Russ.)

3. Zaitseva I.V. Demograficheskoe razvitie Stavropol'skogo kraya kak osnova formirovaniya trudovykh resursov [Demographic development of the Stavropol Territory as a basis for the formation of labor resources]. *Nauchnyy zhurnal Kub GAU* [Scientific Journal of KubSAU], 2012, no. 81 (07), pp. 1–16. (In Russ.)
4. Korchak E.A. *Trudovoy potentsial severnykh regionov v ramkah realizatsii gosudarstvennoy politiki Rossiyskoy Federatsii v Arktike* [Labor potential of the northern regions in the framework of the implementation of the state policy of the Russian Federation in the Arctic]. Apatity, KSC RAS Publ., 2017, 225 p. (In Russ.)
5. Istomin A., Selin V. Strategiya i vozmozhnosti programmno-tselevogo podhoda v regulirovanii regional'nogo ekonomicheskogo razvitiya [Strategy and possibilities of the program-target approach in the regulation of regional economic development]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2009, no. 3 (7), pp. 25–36. (In Russ.)
6. Vorobyev A.A. Trudovoy potentsial regionov Privolzhskogo federal'nogo okruga: analiz i vozmozhnosti ego povysheniya [Labor potential of the Volga Federal District regions: analysis and opportunities for its increase]. *Ekonomika i predprinimatel'stvo* [Economy and Entrepreneurship], 2015, no. 12, part 2, pp. 410–413. (In Russ.)
7. Popova L.A., Terentieva M.A. Trudovoy potentsial rossiyskogo Severa [Labor Potential of the Russian North]. *Arktika i Sever* [Arctic and North], 2014, no. 14, pp. 51–69. (In Russ.)
8. Terentyeva M.A. Trudovoy potentsial severnogo regiona i problemy professional'nogo obrazovaniya [Labor potential of the northern region and the problems of vocational education]. *Problemy obrazovaniya* [Problems of education], 2015, no. 1, pp. 118–136. (In Russ.)
9. Yarasheva A.V., Makar S.V. Vliyaniye demograficheskikh faktorov na trudovoy potentsial regionov Dal'nego Vostoka [The Impact of Demographic Factors on the Labor Potential of the Far East Regions]. *Ekonomika. Nalogi. Pravo* [Economics, taxes & law], 2019, no. 2, pp. 103–114. (In Russ.)
10. Teslya A.B., Bulacheva L.V. Formirovaniye i razvitie trudovogo potentsiala Arkticheskoy zony Rossiyskoy Federatsii [Formation and development of labor potential of the Russian Federation Arctic zone]. *Vestnik MGTU* [Vestnik of MSTU], 2015, no 3, vol. 18, pp. 537–546. (In Russ.)
11. Samarina V., Skufyina T. and Samarin A. Russia's North Regions as Frontier Territories: Demographic Indicators and Management Features. *European Research Studies Journal*, 2018, no. 3, pp. 705–716.
12. Revich B., Kharkova T., Kvasha E., Bogoyavlenskiy D., Korovkin A., Korolev I. Sotsial'no-demograficheskie ogranicheniya ustoychivogo razvitiya Murmanskoy oblasti [Sotsiodemographic limitations of the sustainable development of Murmansk oblast]. *Problemy prognozirovaniya* [Studies on Russian economic development], 2014, no. 2, pp. 127–135. (In Russ.)
13. Schmidt J., Aanesen M., Klokov K., Khrutshev S. and Hausner V. Demographic and economic disparities among Arctic regions. *Polar Geography*, 2015, no. 38, pp. 251–270. DOI 10.1080/1088937X.2015.1065926
14. Markin V., Silin A. Chelovecheskiy i sotsial'nyy potentsial neoindustrial'nogo osvoeniya Arktiki: sotsiologicheskyy analiz, modelirovaniye, regulirovaniye [Human and social potential of neo-industrial development of the Arctic: sociological analysis, modeling, and regulation]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2017, no. 6 (10), pp. 75–88. DOI <https://doi.org/10.15838/esc/2017.6.54.5> (In Russ.)
15. Ivanova M., Klyukina E. Sovremennyye predposylki budushchego arkticheskikh trudovykh resursov [Contemporary preconditions for the future of the Arctic labor resources]. *Monitoring obshchestvennogo mneniya: ekonomicheskie i sotsial'nye peremeny* [Monitoring of Public Opinion: Economic and Social Changes Journal], 2017, no. 6 (142), pp. 180–198. DOI <https://doi.org/10.14515/monitoring.2017.6.08> (In Russ.)
16. Glazhev S., Lokosov V. Otsenka predel'no-kriticheskikh znacheniy pokazateley sostoyaniya rossiyskogo obshchestva i ikh ispol'zovanie v upravlenii sotsial'no-ekonomicheskim razvitiem [Assessment of the critical threshold values of the indicators of the state of Russian society and their use in the socio-economic development management]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2012, no. 4 (22), pp. 22–41. (In Russ.)

17. Sharova E.N., ed. *Zhiznennye strategii molodezhi v usloviyakh Kol'skogo Severa (po materialam sotsiologicheskogo issledovaniya)* [The life strategies of young people of the Kola North (based on sociological research)]. Murmansk, Barents Press Publ., 2015. 175 p. (In Russ.)
18. Mitroshina M.N. Problemy zanyatosti naseleniya monogorodov Arkticheskoy zony Rossiyskoy Federatsii [The employment problems in mono-profile towns of the Russian Arctic]. *Regional'naya ekonomika i upravlenie: elektronnyy nauchnyy zhurnal* [Regional economics and management: electronic scientific journal], 2016, no. 3 (59). (In Russ.)
19. Suopajärvi L., Ejdemo Th., Klyuchnikova E., Korchak E., Nygaard V., Poelzer G.A. Social impacts of the “glocal” mining business: case studies from Northern Europe. *Mineral Economics*, 2017, vol. 30, is. 1, pp. 31–39. DOI <https://doi.org/10.1007/s13563-016-0092-5>
20. Manjeet K. Arctic Legal System: a New Sustainable Development Model. *Russian Law Journal*, 2016, no. 4 (2), pp. 83–95. DOI <https://doi.org/10.17589/2309-8678-2016-4-2-83-95>
21. Alvarez J., Yumashev D., Whiteman G. A framework for assessing the economic impacts of Arctic change. *Ambio. A Journal of the Human Environment*, 2019, Jun 24, pp. 1–12. DOI <https://doi.org/10.1007/s13280-019-01211-z>
22. Newton St.T., Fast H., Henley Th. Sustainable Development for Canada's Arctic and Subarctic Communities: a Backcasting Approach to Churchill, Manitoba. *Arctic*, 2002, vol. 56, no. 3, pp. 281–290.
23. Jovovic R., Draskovic M., Delibasic M. and Jovovic M. The concept of sustainable regional development — institutional aspects, policies, and prospects. *Journal of International Studies*, 2017, no. 10 (1), pp. 255–266. DOI <https://doi.org/10.14254/2071-8330.2017/10-1/18>