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Demographic Potential of the Krasnoyarsk Territory (Krai): Current State and Prospects

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The article presents the specifics of the demographic situation in the Krasnoyarsk territory (Krai) based on data of the official statistical information of the Federal State Statistics Service (Rosstat) and its territorial authority across the Krasnoyarsk territory (Krasnoiarskstat) in dynamics for 2010-2015. The purpose of this article is to estimate the demographic potential that is understood as a part of the population with certain quantitative (number, density, urban saturation) and qualitative indexes (structure and composition of the population) necessary for social and economic development of the territory. It is shown that deterioration in key demographic parameters of the Krasnoyarsk territory in a medium-term prospect causes a need of compensation for a natural decline in population by a positive migration balance. The article verifies a judgment on population problems available in literature that a low demographic potential is a considerable restriction for the development of the territory.

Keywords: Krasnoyarsk territory, demographic potential, population, birth rate, death rate, migratory movement of population, number of population, per mille (%).

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Research area: economics.

The Krasnoyarsk territory has high importance for economic development and preservation of Russia's territorial integrity; an important factor in determining the development of its productive forces is the demographic and employment potentials. The formation of the population of the region is strongly influenced by harsh climatic conditions, geographical remoteness from the economic and cultural centres of Russia, as well as the environment.

Sources to improve the quality characteristics of the demographic potential are: an increase in life expectancy, an effect on the age structure of mortality, a change in directions of migration flows and reduction of morbidity in the working age. Determination of sources allows us to formulate measures for the development of the demographic potential and adjust the demographic processes (Zhukov: 2010; Chupaida, Ostavnova: 2011, p. 104).

The primary characteristic of the population is its number expressing the total result of

the economic, social and cultural activities of people.

According to statistics, over the past five years the number of inhabitants of the Krasnoyarsk territory increased marginally: from 2828.2 thousand people in 2010 to 2858.8 thousand people in 2015. The composition of the population has not changed: it is dominated by women (53.3%), urban residents (76.7%). The Krasnoyarsk territory as the second largest area in the Russian Federation is characterized by low population density: 1.8 persons per square kilometre at the average rate of 8.55 people (Krasnoiarskstat: 2015, p. 38-39). Such a demographic potential of the territory is clearly insufficient for the development of its natural resources. The population of the territory has an uneven, "focal" nature: a considerable part of the population – almost a third part – is concentrated in the regional centre, about 80% of the population live in the south of the Angara – one-tenth of the territory.

The lack of a unified system of settlement, dispersion and social-territorial isolation of settlements from each other, enormous scopes and uneven settlement require huge material costs for bridging spaces and the infrastructure development in the region (Slavina: 2007, p. 30).

The main components of the population change are the natural and migration growths. The natural population growth is the most common characteristic of the intensity of the population growth, and is usually measured by an index of the natural population growth as the difference between the birth rate (number of born people per 1000 inhabitants) and the death rate (number of deceased people per 1000 inhabitants) in per mille (‰) that is equal to one-thousandth of a proportion.

In 2009, for the first time since 1992 the Krasnoyarsk Territory reached a positive natural population growth: 0.2 ‰ in 2009, 0.1 ‰ in 2010, 0.5 ‰ in 2011 and 1.5 ‰ in 2012. In 2013 and

2014 the rate of natural growth was 1.7 ‰, which is higher than the national average rate by 1.5 ‰ or 8.5 times. However, the total birth rate, despite its growth from 1.614 in 2010 to 1.807 in 2014, is low and does not reach the level of replacement (Krasnoiarskstat: 2015, p. 47).

Analyzing the main trends and results of reproduction of the population in the Krasnoyarsk Territory in the post-Soviet period, the professor L.N. Slavina identifies a number of negative phenomena in the socio-demographic sphere: a growing number of single-parent families and free marriages, lack of replacement of generations, aging society, decline in the proportion of reproductive contingent and its aging, deformation of the age-sex composition. Without denying the improvement of some of the population growth rates in recent years, the author states, "to consider that a demographic tragedy ended would be wrong" (Slavina: 2013, p. 212-213). A similar assessment is given by other researchers (Zhuk, Lozhko: 2011; Zhukov: 2013), the participants of the All-Russian scientific-practical conference "Demographic Development of Russia: problems of the demographic policy and strengthening the support of the population" held in Moscow on April 19-20, 2011. R.A. Galetskaja dedicated an article to the analytical review of materials of this event (Galetskaja: 2011).

In 2014, in the overall Russia's birth rate (14.4 ‰) and death rate (12.5 ‰) the Krasnoyarsk Territory took the 12th and 26th places respectively, and in terms of infant mortality (8.3 ‰) it was on the 60th place among 85 subjects of the Russian Federation (Rosstat: 2015, p. 50-53). Meanwhile, infant mortality, child mortality in the first year of life, is one of the main indicators characterizing human health, and its reduction contributes to the increase in the expected lifespan (Katkova: 1994, p. 239).

According to the "Concept of the Russian Federation population policy for the period till

2025", by 2015 the life expectancy of the Russian population should increase up to 70 years, and by 2025 – up to 75 years (Concept: 2007). Despite the positive dynamics of the average life expectancy of the entire population of the Krasnoyarsk Territory, from 67.57 years in 2010 to 69.23 years in 2014, these figures are below the nationwide average by 1.5 years. There remains a gap in life expectancy between men and women, citizens and villagers of the Krasnoyarsk Territory: in 2014 the difference was 4.3 years and 11.23 years respectively (Rosstat: 2015, p. 54-57; Krasnoyarskstat: 2015, p. 47).

According to the average case forecast, by 2025 the life expectancy at birth in the Krasnoyarsk Territory will be 72.8 years, which is below a predetermined parameter; the population decline (negative rate of the natural growth) will be marked as early as 2022 (Krasnoyarskstat: 2016), which highlights the issue of replacement migration. However, it is necessary to consider a number of factors. Firstly, the dynamics of immigration growth rates (per 10 thousand people) in the Krasnoyarsk territory: 28 – in 2011, 13 – in 2012, 5 – in 2013 and 3 – in 2014. In comparison with the overall Russian rates, the Krasnoyarsk territory's rate was 0.78 times higher in 2011, then began to decline, and in 2014 the difference was already 6.3 times (Rosstat: 2015, p. 62-63). It is expected that in 2016 in the Krasnoyarsk Territory, the number of foreign workers will decline by 20% due to the depreciation of the real exchange rate of rouble (Solov'eva: 2015). Secondly, the migration processes have a negative impact on the development of the drug situation in the Krasnoyarsk Territory (Kilin, Konovalova, Putimtsev: 2014). Thirdly, the Krasnoyarsk Territory is not attractive for migrants due to harsh climatic conditions and high level of pollution.

In recent years, climate changes are seen as one of the important factors affecting health and mortality of the population, along with

such traditional risk factors of the industrial era as pollution of air and drinking water, smoking, drugs, and others. According to the WHO estimates, climate changes are currently responsible for approximately 150 thousand premature deaths in the world and 55 million person-years of disability on average per year, which is 0.3% and 0.4% of the global mortality and disability, respectively. (Report: 2013, p. 120-121).

An effect of environmental factors on health is significant. Although in the Krasnoyarsk Territory the environmental protection measures are being implemented, the ecological situation remains difficult. The morbidity is increasing due to the growing accumulation of pollutants and air emissions in urban areas. The studies in the Institute of Economics and Industrial Engineering of SB RAS showed that the negative impact of an environmental factor on health can be observed in the adult population. Children are more prone to the influence of economic, social and psychological factors: during formation a child's body reacts more to sanitary-hygienic conditions, quality of nourishment, recreation, etc. In case of maintaining the existing level of air pollution, the probability of cancer among residents of Krasnoyarsk is equal to the upper limit of acceptable risk, the risk of developing chronic diseases exceeds the acceptable level from 5.8 to 18.1 times. A high dust content in cities of the territory causes an increase in overall mortality from 6.4% to 22.7%, while the number of additional deaths each year can be from 82.5 to 261.5 (Kazantseva, Tagaeva: 2014, p. 179).

In the period from 2018 till 2030, the number of able-bodied population of the Krasnoyarsk Territory will be reduced by 200-360 thousand people (11-20% of the working population in 2008), which is due to the wave-like nature of demographic processes and changes in the

population's age structure (Human capital of the Krasnoyarsk Territory: 2010, p. 114).

The population decline is considered by specialists of the Institute of Economics and Industrial Engineering of SB RAS as one of the threats to the formation of the demographic potential (Soboleva, Smirnova, Chudaeva: 2011, p. 99-107).

The decline in birth rate (it is determined by the combined influence of physiological, marriage and family, social and economic factors) affects the reduction of the working-age population, whose share in the total population of the Krasnoyarsk Territory is as follows: 60.6% in 2014, 59.7% in 2015. According to the average case forecast it will decrease to 58.7% in 2016, 54.9% in 2025 (Krasnoyarskstat: 2015, p. 44).

Labour shortages could become a major limiting factor of the development of the region. Decline in the labour potential would go on not only due to the decrease in its number, but also due to the aging of the working population. According to the international standards (United Nations

classification), the population is considered old, "if the proportion of people aged 65 and over is more than 7% of the total population" (Demoscope Weekly: 2010). A number of Russian regions, where the proportion of the elderly and senior citizens is higher than 20%, can be called "demographic disaster zones". They also include the Krasnoyarsk Territory, where currently almost every fifth resident (i.e. 20.62% of the population) is older than the working age people (estimated by Krasnoyarskstat: 2015). This increases the number of dependants per one of working age, leads to an increase in social spending to support the entire infrastructure serving the elderly population, requires an increase in the tax burden on the economy and reforming the pension system. It is possible that the costs of care for the elderly are growing not as a result of an increase in the number of this group in the population, but as a result of the general rise in prices of medical and social services per capita. In any case, satisfaction of needs in health care and social protection of older people depends on the demographic factors and the development of science and technology.

References

Chelovecheskii kapital Krasnoyarskogo kraia (2010). Chelovecheskii kapital Krasnoyarskogo kraia: Forsait-issledovanie-2030 [Human capital of the Krasnoyarsk Territory: Foresight-research-2030. Analytical report]. Ed. V.S. Efimov, Krasnoyarsk; Siberian Federal University: 126 p.

Chupaida, A.M., Ostavnova, L.A. (2011). Gosudarstvennaia politika zaniatosti na rynke truda [A state policy of employment in labor market]. Biznes. Obrazovanie. Pravo [Business. Education. Law], In *Vestnik Volgogradskogo instituta biznesa* [Bulletins of Volgograd Institute of Business], (4), 101-107.

Concept (2015). Kontseptsiiia demograficheskoi politiki Rossiiskoi Federatsii na period do 2025 goda. [The population policy concept of the Russian Federation for the period till 2025]. Approved by the Decree of the President of the Russian Federation dated October 9, 2007. (1351) (as revised in the Decree of the President of the Russian Federation dated July 1, 2014 (483)). Available at: https://www.consultant.ru/document/cons_doc_LAW_71673/7a46cb13de731db3333fcd77a4f7887e468287e3/ (accessed 16 February 2016).

Demoskop (2010). In *Demoskop Weekly* [Demoscope Weekly]. Institute of Demography of the National Research University Higher school of economics, (443-444), November, 15-28. Available at: <http://demoscope.ru/weekly/2010/0443/barom02.php> (accessed 20 February 2016).

Galetskaia, R.A. (2011). Demograficheskoe razvitie Rossii v pervoi chetverti XXI veka i zadachi usileniia sotsial'noi podderzhki naseleniia [Demographic development of Russia in the first quarter of the 21st century and a problem of strengthening of social support of the population], *In Problemy prognozirovaniya [Prediction problems]*, (6), 120-131.

Katkova, I.P. (1994). Mladdencheskaia smertnost'. [Infant mortality]. G.G. Melik'ian (chief editor). *Narodonaselenie. Entsiklopedicheskii slovar' [Population. Encyclopedic dictionary]*, Moscow: Big Russian encyclopedia: 239 p.

Kazantseva, L.K., Tagaeva, T.O. (2014). Vliianie okruzhaiushchei sredy na zdorov'e naseleniia regionov Urala, Sibiri i Dal'nego Vostoka. [Influence of environment on health of the population in regions of the Urals, Siberia and the Far East]. *InterEkspo. Geo-Sibir'*, 3, (1), 175-180.

Kilin, A.Z., Konovalova, O.V., Putimtsev, A.B. (2014). Migratsionnye protsessy i razvitie narkosituatsii v Krasnoiarskom krae [Migration processes and development of a drug-situation in the Krasnoyarsk Territory], *In Vestnik Krasnoiarskogo gosudarstvennogo pedagogicheskogo universiteta imeni V.P. Astaf'eva [Bulletins of Krasnoyarsk State Pedagogical University named after V.P. Astaf'ev]*, 2(28), 18-24.

Krasnoiarskstat (2015). Krasnoiarskii kraevoi statisticheskii ezhegodnik: 2015. Statisticheskii sbornik [Krasnoyarsk regional statistical year-book: 2015. Statistical collection], 1.37.2, Krasnoyarsk: 497p. Available at: http://krasstat.gks.ru/wps/wcm/connect/rosstat_ts/krasstat/ru/publications/official_publications/electronic_versions/ (accessed 10 February 2016).

Krasnoiarskstat (2016). Ofitsial'naia statistika. Naselenie. Demograficheskii prognoz [Official statistics. Population. Demographic forecast]. Available at: http://krasstat.gks.ru/wps/wcm/connect/rosstat_ts/krasstat/ru/statistics/population/ (accessed 20 March 2016).

Report (2013). Doklad o chelovecheskom razvitiu v Rossiiskoy Federatsii. 2013. "Ustoichivoe razvitie: vyzovy Rio" [The report on human development in the Russian Federation. 2013. "Sustainable development: challenges of Rio"]. Ed. S.N. Bobylev. Moscow, OOO "RA IL'F", 202 p. Available at: <http://demoscope.ru/weekly/2013/0567/biblio04.php> (accessed 14 March 2016).

Rosstat (2015). Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli. 2015. Statisticheskii sbornik [Regions of Russia. Socio-economic indexes. 2015. Statistical collection], Moscow, 1266 p. Available at: http://www.gks.ru/bgd/regl/b15_14p/Main.htm (accessed 20 March 2016).

Slavina, L.N. (2007). Sel'skoe naselenie Vostochnoi Sibiri (1960–1980-e gg.), [Rural population of East Siveria (1960-1980's)], Krasnoyarsk, Krasnoyarsk State Pedagogical University named after V.P. Astaf'iev: 472 p.

Slavina, L.N. (2013). K dvadtsatiletiiu depopuliatcii: regional'nyi aspekt demograficheskoi tragedii [To the twentieth anniversary of depopulation: regional aspect of the demographic tragedy], *In Vestnik Krasnoiarskogo gosudarstvennogo pedagogicheskogo universiteta imeni V.P. Astaf'eva [Bulletins of Krasnoyarsk State Pedagogical University named after V.P. Astaf'ev]*, 4(26), 208-213.

Soboleva, S.V., Smirnova, N.E., Chudaeva O.V. (2011). Riski v formirovanii demograficheskogo potentsiala Sibiri [Risks in formation of demographic capacity of Siberia], *In Region: Ekonomika i sotsiologiia [Region: Economics and Sociology]*, (4), 93-115.

Solov'eva, O. (2015). Ot'ezd gastrabaiterov grozit otechestvennym predpriiatiyam rostom izderzhkek [Departure of migrant worker threatens domestic enterprises with growth of expenses]. *In Demoskop weekly [Demoscope Weekly]*, (625-626), January 1-25. Available at: <http://demoscope.ru/weekly/2015/0625/gazeta021.php> (accessed 20 March 2016).

Zhuk, V.A., Lozhko, V.V. (2011). Sviaz' demograficheskikh protsessov s sotsial'no-ekonomicheskim razvitiem regionov i sovershenstvovanie demograficheskoi politiki [Connection of demographic processes with social and economic development of regions and improvement of population policy], *In Problemy sovremennoi ekonomiki [Problems of the ideal economy]*, (3), 192-196.

Zhukov, V.I. (2013). Demograficheskii potentsial Rossii i stran mira. [Demographic potential of Russia and countries of the world], *In Uchenye zapiski Rossiiskogo gosudarstvennogo sotsial'nogo universiteta [Scientific notes of the Russian State Social University]*, (1), 4-15.

Демографический потенциал Красноярского края: состояние и перспективы

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В статье представлена в динамике за 2010–2015 гг. специфика демографической ситуации в Красноярском крае, основанная на данных официальной статистической информации Федеральной службы государственной статистики (Росстат) и его территориального органа по Красноярскому краю (Краснояркстат). Цель данной работы – оценить демографический потенциал, под которым понимается совокупность населения с определенными количественными (численность, плотность, уровень урбанизации) и качественными показателями (структура и состав населения), необходимыми для социально-экономического развития территории. Показано, что ухудшение ключевых демографических параметров Красноярского края в среднесрочной перспективе вызывает потребность возмещения естественной убыли населения положительным миграционным сальдо. Верифицировано имеющееся в литературе по проблемам народонаселения суждение, что низкий демографический потенциал является значительным ограничением для развития территории.

Ключевые слова: Красноярский край, демографический потенциал, народонаселение (население), рождаемость, смертность, миграционное движение населения, численность населения, промилле (‰).

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