

MAN IN SIBERIA: A SOCIO-GEOGRAPHICAL ANALYSIS

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Abstract

The present-day geography of the population distribution in Siberia is examined. Evidence for a linkage of the human settlement pattern with the climatic-comfort conditions (spanning the area from the Arctic coast to the semi-deserts in the south of Siberia) is presented. A detailed study is made of the demographic situation. The number of people living in different natural-climate zones of Siberia, and the number of people living in areas with different levels of environmental pollution are calculated. A socio-geographical analysis is made of the man-natural environment interaction for different stages of development ranging from the utilization of the natural environment as the source of life resources of small (indigenous) peoples (the Evenki, and the Tofalars) to the utilization of the natural environment largely for waste disposal around industrial-urbanized settlements. The report is illustrated with a map titled "Demo-ecological regionalization of the Asian part of Russia).

Keywords: Siberia, settlement of Siberia, demographic situation, demographic crisis, socio-geographical analysis, environment of life activity, incoming and indigenous population

1. Methodology

Socio-geographical analysis implies comprehensive regional investigations into the connections and relations of the population with the territory as the arena of life activity, the natural and anthropogenic properties of which determine the territorial conditionality and pronouncedness of the socio-demographic, medico-biological and economic state and potential of population development. It is recognized that the regional is merely a particular manifestation of the global within a specific territory.

The methodology of socio-geographical analysis is based on the concept of determinism of social characteristics of the population by the discreteness of ecological conditions of the human life. This is consonant with the attempts made by T. Hagerstrand to call attention to the problem of the quality of people, who are "packed" in space and time.

The studies include cartographic-statistical analysis, systematization and summarization of geographical information in order to reveal and substantiate the conclusions about the spatio-temporal connections of socio-demographic processes with natural-climatic conditions, the state of environmental pollution, and with the development level of the social infrastructure.

The algorithm of socio-geographical analysis focuses on the study of the settlement of the territory, the established territorial distribution of the indigenous and incoming population, assessment of the current economic, social, demographic and ecological aspects relating to everyday satisfaction of the population's biological, social and economic requirements, as well as the labor, cultural-household, managerial and recreational connections which close on settlements and distribution systems with corresponding residential, production and recreational territories. It is important to identify geographical determinants that are responsible for the spatio-temporal differentiation of socio-geographical phenomena and processes.

2. Results

2.1. Settlement history

The term "Siberia" derives from the name of an ethnic group, sipyr (syovyr, sabir), the ancestors of the ancient Ugrians. Later on, the name shibir, sibir came to refer to the Turkic group living along the Middle Irtysh (Boyarshinova, 1971).

Russians arrived in Siberia in the 16th-17th centuries. In the far North, and in the tundra and forest-tundra, they encountered the Nenets people; in the forest band with the Khanty, Mansi and Selkup people, and in the forest steppe with various Turkic peoples.

The first immigrants appeared in Siberia in 1590 (Old Style, Julian calendar). They consisted of 30 families that moved to Siberia by a decree of the Tsar. They were taken from Solvychegorsk and “placed for eviction” to Siberia (Dolgikh, 1960).

The opening up of Siberia and the Far East is often compared with the colonization of North America. However, the Russian settlers had no land conflicts with aboriginal peoples having regard to the huge free territories. Furthermore, Russian authorities were striving to preserve their future payers of “yasak” (furs) taxes.

The first half of the 19th century saw an ongoing intense process of the increasing population of Siberia through governmental and voluntary-popular colonization as well as owing to natural growth. The settlers arrived mostly from the northern gubernias: the Arkhangel, Vologda, Vyatka and Perm gubernias. The principal role in the spontaneous settling of Siberia from the end of the 16th century, and in economic development of the immense Siberian territory was played by the Russian peasants. Over the course of the 17th century they were setting the stage for the formation in the taiga and forest-steppe part of Siberia, of large agricultural districts (Boyarshinova, 1971).

2.2. Territorial population distribution

During all stages of settlement of Siberia, the main factor determining the territorial population distribution was represented by the climatic conditions, the suitability of the territory for agriculture, and by the availability of transport routes. The incoming population occupied the best lands on the forest-steppe plains and depressions in southern Siberia forcing the aboriginal peoples to move farther out to the north, and settled along the river valleys and transport routes (terrestrial and water ways).

Today, the bulk of the population of Siberia is concentrated along the Trans-Siberian railroad. It is the “main band of settlement” in Siberia with favorable natural conditions for agriculture, stock raising, and the preservation of human health. The surface area of these districts against the total area of Siberia does not exceed 20%. Obviously there is a “deficit” of territories with favorable natural conditions for the life of those, who arrived in Siberia from the European part of Russia. It is an established fact that nearly 80% of the population of Siberia live in 20% of its territory (Table 1).

Table 1

Territorial distribution of the population of West and East Siberia

Geographical types of the habitation environment with an assessment of comfort of natural conditions for the incoming population	Area (% of the total area of the region)	Percentage of the permanent population (of the total population of the region)
Arctic: absolutely extreme	18.7	1.8
Middle-taiga extreme and discomfort	17.9	4.4
Southern-taiga discomfort	39.3	14.2
Subtaiga and forest-steppe most comfortable	7.3	62.6
Desertified and dry-steppe types of the depressions and high plains, discomfort	0.5	3.2
Mountain-taiga and taiga types of large intermontane depressions in southern Siberia, discomfort	4.6	1.9

The total area occupied by the settlers in Siberia is more than 5.5 mln km², with the population size totaling about 23.4 mln.

The change in the population size from the most comfortable to discomfortable areas reflects largely the influence of climate in the settlement of Siberia.

Internal migration has a pronounced impact on the spatial distribution of the population. The freshly emerged outflow of the population to the European part of Russia seems to continue in the future. According to a forecast made by Goskomstat of the Russian Federation, the population size of the Far-Eastern region would decrease from 7.6 to 4.1 mln by the year 2025 in this case. In the north, north-west and in East Siberia there is also a decrease in the population; yet, it is less when compared with the Far-Eastern areas.

2.3. The demographic situation

The population of Siberia has formed for a long time, intimately connected with economic development of the territory. Its distribution at separate periods in the past clearly reflects the specific character of economic development of the territory. The current area of settlement is “superimposed” by the types of development of the territory dating from different times. These same processes have also their repercussion in the dynamics of Siberia’s population size (Table 2).

Table 2

Years	1863	1897	1913	1920	1926	1939	1959	1970	1989	1990	2002	2006
Population	3.1	5.9	9.9	8.8	11.0	13.7	17.7	25.4	24.5	24.2	23.7	23.2

*Compiled using the data from: V.I. Pronin 91981); The Population of Siberia during 50 years (1863-1913). The History of the USSR, 1981, No. 4, pp. 55, 59. The Population of the USSR (1975); The Results of the All-Russian Population census 2002 (2004).

In the post-war period, Siberia referred to areas with an specially intense migration exchange. Every year 95-100 persons per 1000 urban citizens arrived and left Siberia. According to the figures of entry and exit, among all economic areas Siberia was exceeded only by the Far East. During 1950-1990 the population of Siberia as a whole increased nearly by 10 mln (9.6): West Siberia by 5.4 mln, and East Siberia by 4.2 mln. Virtually all population growth corresponds to cities and workmen’s settlements. The share of the urban population of Siberia increased from 14 to 34%. The rural population size increased only by 0.4 mln, whereas it decreased by 0.2 mln in West Siberia.

The greatest influx of the incoming population in Siberia refers to the years of development of the oil and gas areas in West Siberia, expansion of non-ferrous metallurgy and timber processing industries, the construction of hydropower stations and of the Baikal-Amur Main railroad, etc. The BAM’s population consists of 48.2% of the immigrants from Siberia, and of 40.2% from the European part of the country.

Over the past two decades the overwhelming majority of kraies and regions have shown a natural decrease of the population due to low birthrates and high death rates. The only exception are the Republics of Altai, Sakha and Tyva, and the Chukotsky autonomous okrug.

During the said period, a demographic crisis emerged in the form of a negative natural growth, or depopulation, which is plotted as the intersection of two curves: an increase of death rate, and an abrupt decrease of birthrate (Fig. 1).

Figure 1. The birthrate and death rate dynamics of Russia during 1978-2005 (per 1000 persons). Quot.: The Electronic Version of the Bulletin (The Population and Society” (2006)

This configuration that received the symbolic name “Russian cross”, characterizes the main demographi tendency of modern Russia. In 2004, the excess of deaths over births, that is, the natural decrease of the population, amounted to 790 thousand people (The Electronic Version of the Bulletin, 2006).

Ethno-confessional features of the demographic crisis in Russia were observed for the period from 1989 to 2002. Not all Russia’s peoples are under the cross of intersection of the birthrate and death rate curves. A substantial increase in the size of the indigenous population at that period was observed for the peoples in the Far East, Siberia, and the North. The hard natural conditions never became an obstacle for them to be in possession of many children. From 1989 to 2002, the size of the Mansi population increased by 44.6%, the Khanty by 30%, the Itelments by 25%, etc. An important factor of demographic behavior of the indigenous peoples is their characteristic striving for the preservation of their kin. The average birthrate for the Nenets population exceeds three children thus constituting one of the highest figures among Russia’s peoples. The families of the Dolgans, Khanty, Chukchi, Evenki, and some other peoples have from 2.5 to 3 children, on average (The Results of the All-Russian Population census 2002, vol. 12, 2005).

The reasons for the crisis of the demographic situation in Siberia reflect the overall crisis in Russia. As maintained by N.M. Rimashevskaya, the director of the Institute of Socio-Economic Problems of the

Population RAS, the following problems are important when assessing the demographic situation: degradation of the environment that, in many regions, approaches a disastrous level; nearly extreme poverty; very serious social differentiation contributing to disintegration of society; loss of the system of values in the absence of any guiding lines for most of the society; escalating increase in crime with no safety guarantees at all, and the loss of labor potential by the country. The ongoing reforms neglect the intimate connection between economic and social transformations (Rimashevskaya, 2004, p. 216).

2.4. The indigenous population of Siberia

According to the data from Goskomstat of the Russian Federation, the aboriginal residents of Siberia as of the year 2002 made up 4% of its total population (The Results..., vol. 13, 2005).

Before the arrival of Russians, about 200 thousand aboriginal people lived in the region beyond the Ural mountains; by the end of the 19th century the population exceeded 800 thousand, or increased by a factor of four. The Yakut ethos increased from 40 to 245 thousand. Even without the “new indigenous people”, the number of the aboriginal peoples of the North increased from 199 thousand (1989) to 229 thousand (2002). The bulk of the growth corresponds to the indigenous peoples in the “oil and gas” okrugs (the Nenets and Khanti – 7 thousand each, and the Mansi – 3.7 thousand). There was a considerable increase of the number of Evenki (by 5.5 thousand).

The everyday life conditions of the aboriginals changed drastically. About 30% of the aboriginals of the North currently live in urban settlements. Half of the Kets, Nivkhs, Saamis, Eskimos and Yukagirs are officially recognized as town-dwellers. The Shortsi (Kemerovo region) are urbanized nearly by 90%. Less than a quarter of the aboriginals are engaged in traditional trades. Only 18% of the Khanty and Mansi live in their clan nomad camps. Only 42% of Russia’s aboriginals can speak their native languages. Whereas 76% of the Nenets can speak the language of their ancestors, only half of the Chukchi and Khanty can speak their native languages. On the other hand, only 12-13% of the Kamchatka Itelmens, Primorye Udege and Sakhalin Nivkhs have a command of their native tongues (The Results of the All-Russian Population census 2002, vol. 13, 2005).

In the Siberian regions, the very poorly economically developed Republics of Tyva and Altai showed by the year 2002 a marked natural growth of the population, which seems to be determined by the factors of an ethno-cultural character. Whereas the size of the permanent population in the Siberian Federal Okrug during the period 1989-2002 decreased from 1.3 to 4.8 percent, it increased by 6.3 percent, or by 12.3 thousand, in the Republic of Altai.

Assessing in terms of ethnic geography the development of the indigenous population of Siberia as part of the Russian and then Soviet state, many authors arrive at the conclusion that during the period under consideration the population dynamics of most ethnoses of the region was characterized by positive figures (Krivonogov, 1998; Stewart J.M., 1984).

2.5. The ecological problems

The main centers of concentration of the population are represented by Siberia’s areas. Virtually about 70% of the population of Siberia live in an industrially modified environment, which – under the Siberian conditions – takes on a decisive significance in the formation of the quality of human life. About 50% of the population of West Siberia, and nearly 70% of the population of East Siberia live in conditions of a heavily polluted environment (Table 3).

Table 3

Population distribution with respect to territories with a different level of environmental pollution			
Pollution levels	West Siberia	East Siberia	Far East
Maximal	47.1 %	68.4 %	-
Medium	52.4%	9.5 %	52.2 %
Low	-	19.9 %	38.0 %
Minimal	0.5 %	2.2 %	9.8 %

One-half of the ecologically unfavorable Russian cities are in the Siberian Okrug. Siberian industries account for 1/3 of harmful emissions and discharged into the environment. Forest fires are becoming real calamities. The high environmental pollution level, combined with the unfavorable natural-climatic

conditions, is responsible for the high sickness rate and mortality of Siberia's population – according to our data, it exceeds 25-30% when compared with Russia's average, and in some areas it is in excess of as much as 40% (Ryashchenko, 2000). The incidence rate of socially conditioned diseases is high (such as drug addiction, tuberculosis, and AIDS).

Assessment of the ecological situation in Siberia identifies three types of population-territory interaction: the adaptive type characteristic for the ethnic type of nature management, and the constructive type that is taking place with an increase in recreational, agricultural, timber-industry and industrial nature management. This example vividly illustrates the evolution of population (man)-territory interaction, from very simple ethnic to industrial nature management.

At a level of ethnic nature management the territory is used as the source of life support of the clan community. The priority of a conservancy attitude to the territory remains also for the recreational type of its utilization where the local population is interested in conservation of the naturally occurring properties of the territory as a tourist resource and, hence, as the source of income. Agricultural and industrial development of the territory is accompanied by drastic changes in the environment which is only to a small extent regarded as the source of natural resources for the population. The stage of agricultural activities involves transformation of natural landscapes (deforestation, ploughing), and organization of agricultural lands. In the case of industrial development, the territory surrounding industrial cities is used largely as the disposal area.

2.6. Demographic areas of settlement

Conjugate cartographic analysis of the natural-climatic, medico-demographic and social characteristics of the population served as a basis for identifying within Siberia (including the Far East) three demoeological regions separating the region's territory according to adaptability of the incoming population (consisting mostly of the former residents of the country's middle band) (Fig. 2): A – region of absolutely extreme and subextreme territories combined with discomfortable regions, largely with temporal residence of the incoming population, and with a high annual migration outflow (25-30%); B – regions of discomfortable habitation conditions, largely with ribbon-like settlement along transport routes, and with a high migration mobility of the population (25-30%); C – region with the most comfortable conditions for the region (with the exception of the mountainous areas in southern Siberia), the main areas of the “main band of settlement” with a moderate migration activity of the population (10-15%). The boundary of formation of the areas of technogenic environmental pollution has been delineated, as well as the boundary of favorable socio-geographical forecast of settlement.

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