

THE SUMMARY

The report is devoted to the placement of educational institutions in the Far North and the analysis of the availability of their services for residents of the Arctic zone of the Russian Federation belonging to indigenous peoples.

The report verifies the assumption that the areas of residence of the indigenous population are geographically remote from schools, which prevents the receipt of compulsory secondary education. To test the formulated hypothesis was calculated the Index of Accessibility of Education (EAI). Further, maps were constructed to demonstrate the results obtained.

The Education Accessibility Index is a numerical indicator of the assessment of educational conditions in a particular region. To calculate the indicator, it is necessary to use data on the population living in the region under consideration, the standard number of places in schools per 1000 people (determined by the regional Ministry of Education) and the real number of places in schools.

The education accessibility index is calculated according to formula 1.

$$EAI = \frac{\left(\frac{N}{1000} \times S\right)}{M} \quad (1)$$

where N – the population living in the territory, people;

S – the standard number of places in schools per 1000 people, units;

M – the actual number of places in schools, units.

An Index value equal to 1 and higher indicates high availability of school education in the region; from 0.7 to 1 indicates an average level; below 0.7 indicates low educational availability in the region.

In order to assess the concentration of schools on the territory of the Russian Arctic, a map was built using the spatial modelling method. The "heat" map shows the change in values from the minimum value of schools (white) to the maximum number of schools (green). The displayed colour is associated with the heat map density value and varies in the range from 0 to 1.

Figure 1 shows in which Arctic regions it is difficult for indigenous peoples to get an education. Such peoples include Veps, Dolgans, Evens, Chukchi, Yukaghirs, Chuvans, Selkups, Evenks, Nganasans. Thus, of the 18 nations under consideration, 50% have difficulties with getting an education. Representatives of these nationalities live on the territory (from left to right). The Republic of Karelia, the Komi Republic, the Yamalo-Nenets Autonomous Okrug, the Krasnoyarsk Krai, Yakutia and the Chukotka Autonomous Okrug.

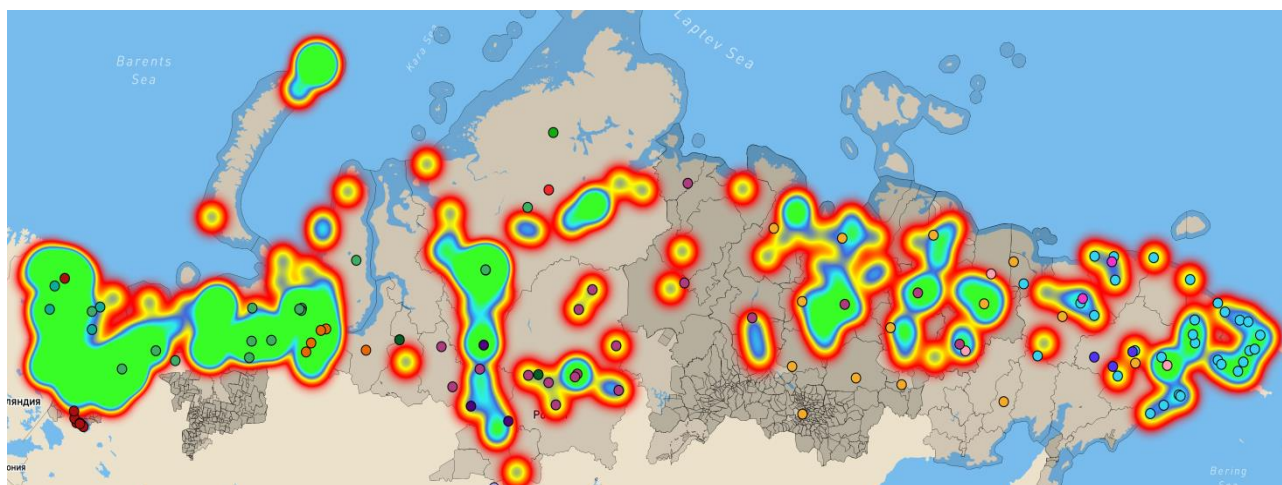


Figure 1. – Heat map of educational institutions and settlement of the indigenous peoples in the Arctic zone of the Russian Federation

Source: Compiled by the authors

Note: the density is calculated automatically by the Mapbox system

Legend: coloured dots are indigenous peoples. Density: 0 - white, 0.1 - red, 0.3 - yellow, 0.5 - blue, 0.7 - blue, 1 - green.

For a detailed analysis of the regions of the Russian Arctic in the regions, the areas where the communities of the indigenous life were considered, but there are no schools that would be within walking distance or transport accessibility. Table 1 shows the educational accessibility index calculated for the districts that were included in the sample.

Regions can be divided into three groups according to the value of the EAI indicator. The regions that are not represented in the table (Komi Republic, Arkhangelsk and Murmansk regions) belong to Group 1. The Republic of Karelia, the Nenets Autonomous Okrug, and the Republic of Sakha (Yakutia) belong to Group 2. Yamalo-Nenets Autonomous Okrug, Krasnoyarsk Krai and Chukotka Autonomous Okrug belong to Group 3.

The territories belonging to the first group have a large number of schools however, not so many indigenous live in the territories, it can be talked about the compliance of the territories of residence and accommodation of educational institutions.

In the regions of the second group, both situations can be observed. In the Republic of Karelia there are no schools in the places of settlement of the indigenous. There are also no nomadic schools in the region and there is one boarding school. There is a shortage of educational institutions, which entails the relocation of indigenous to the city or migration to other regions. Such migration affects the traditional way of life of indigenous peoples and affects the process of education and upbringing of children. In the Nenets Autonomous Okrug on the territory of some districts, representatives of the indigenous have the opportunity to attend schools, in other districts the situation is reversed: there are indigenous on the territory, but there are no schools. There are no nomadic schools in such areas, which complicates the educational process. Nomadic schools operate on the territory of Yakutia. This format of training is more suitable for representatives of the indigenous.

Table 1. Index of Accessibility of Education in the districts of the Russian Arctic

| Region | District | Population (people) | The standard of places in schools (units) | The number of actual places in schools (units) | EAI |
|--------------------------------|--------------------------------|---------------------|---|--|------|
| Yamalo-Nenets Autonomous Okrug | Nadymsky district | 64572 | 110 | 8757 | 0,81 |
| | Yamal district | 16990 | 110 | 3426 | 0,55 |
| | Purovsky district | 51686 | 110 | 7192 | 0,79 |
| | Krasnoselkupsky district | 5752 | 110 | 992 | 0,64 |
| Krasnoyarsk Krai | Taimyr Dolgano-Nenets district | 31627 | 103 | 4980 | 0,65 |
| | Turukhansky district | 15500 | 103 | 2137 | 0,75 |
| Republic of Sakha (Yakutia) | Yuryung-Hain National Nasleg | 1147 | 167 | 222 | 0,86 |
| | Olerinsky nasleg | 709 | 167 | 132 | 0,9 |
| | Khalarchinsky nasleg | 798 | 167 | 116 | 1,15 |
| | Tabalakhsky nasleg | 984 | 167 | 164 | 1 |
| Chukotka Autonomous Okrug | Anadyrsky district | 8381 | 98 | 1216 | 0,68 |
| | Bilibinsky district | 7366 | 98 | 1132 | 0,64 |
| Republic of Karelia | Segezha district | 34761 | 102 | 3921 | 0,9 |

Compiled by the authors

Note: the value of the Index of Accessibility of Education

| | |
|--|----------------------------|
| | – high (1 and above); |
| | – average (from 0.7 to 1); |
| | – low (0.7 and below) |

In the third group of regions, inconsistencies between the location of schools and the areas of residence of the indigenous are pronounced. The problem requires a comprehensive solution because, in addition to the minimum number of institutions in the region, there are difficulties with transport and staffing.

Imperfections in the spatial placement of educational institutions are more or less observed in all the regions of the Russian Federation considered, it is necessary to use available resources to solve these problems. Such resources in the territory of the Russian Arctic can be investments, the interest of private business and government support. Nomadic schools are possible solutions to the shortage of educational institutions. The advantages of such a school are its convenient geographical location: regardless of the places of nomadism, children will always be able to receive an education without interruptions in search of a new place of study and time for adaptation, the quality of education does not suffer at the same time. The main directions of solving the existing problems may be the following recommendations:

Firstly, the construction of schools and the organization of nomadic education. For the successful implementation of such a project, it is necessary to allocate areas where the construction of a mobile school will satisfy the interests of several communities at once.

Secondly, the organization of boarding schools or the provision of opportunities for children of indigenous minorities to live in dormitories on the territory of educational institutions. This option will suit those families where migration occurs more often than once a season. In this case, children will be able to stay in a boarding school for a long period and then return to their families.

Thirdly, the construction of stationary schools in the areas with the highest density of settlement of indigenous. In this case, the sanitary norms of the location of educational institutions will be observed and children will have the opportunity to study without separation from their families.

The study showed that indigenous peoples adhere to two strategies: either they live on a single territory, or different lands at a considerable distance, therefore, when developing projects, it is necessary to take into account how representatives of different nationalities lead a traditional life.

An assessment of the availability of educational institutions in the Arctic zone of the Russian Federation has shown that there is a problem. The number of schools built does not correspond to the number of indigenous representatives living in these territories, and does not meet the standards of transport accessibility. Therefore, the conducted research allows us to formulate a single recommendation for all regions: in matters of placement of educational institutions, it is necessary to take into account the peculiarities of the settlement of indigenous minorities.