Modern features and tendencies of population settlement in the Far Eastern regions of the Russian Far North

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Abstract

The article regards the tendencies in the population distribution in the Far Eastern part of the Russian Far North, taking into account both country-wide trends and specific features of northern territories. The analysis covers the period from 1989 to 2020, that is, from the last Soviet census to the present moment. The authors analyze the dynamics of the population size and its distribution, identify weaknesses in the statistical assessment of the actual population of the northern territories, define trends in the population distribution, namely, reveal the permanent population concentration along the southern borders of the Far Northern part of the Far East and the development of shift workers’ settlements across the remaining territory. In conclusion, the article puts the population distribution dynamics in the Far Eastern part of the Far North into the context of the identified trends.

Keywords

regional demography, Far North of Russia, population settlement system, population migration, Far East, urban settlements

JEL codes: J10, J11

Introduction

The transformational and demographic crises of the 1990s sped up the transition to a period of late urbanization characterized by growth of large cities due to depopulation of smaller cities and rural areas, and have led to significant changes in the population distribution across Russia. Late urbanization is an era of population concentration, not just in large cities, but in large agglomerations. Consequently, we observe fast reduction in the number of small sett-
lements even in the most densely populated regions of the European part of Russia. Against this background, the Far North, with its ultra-low population density and predominance of small settlements, was most susceptible to the negative effects of the above-mentioned processes. Dispersed or linear settlements, which were founded in this region in the course of development of sparsely populated and hard-to-reach areas, shrink in size and its turn into a number of small separate focal points while depopulating. In fact, we face a process that is reverse to spatial development of the Far North in the Soviet years. This process is very dynamic: extreme climatic conditions of the Far North and relatively short history of its economic development justify higher mobility of the population, which contradicts both the authorities’ interest in the strategic potential of these territories and the interest of business in its economic (or rather resource) potential.

The currently observed quantitative and qualitative changes in the Far North population distribution, which correlate with country-wide trends but are more pronounced: we observe depopulation of villages and small towns, reduction in the total number of settlements, with the greatest negative dynamics in the number of urban-type settlements. At the same time, these changes have their peculiarities generated by the specificity of the Far North as a territory of development — for example, here we can point at the wide spread of settlements of shift workers.

The modern system of population distribution of the Far North heirs from Soviet methods of development of the “northern virgin lands” (Tselina), and therefore includes small settlements (mainly of urban) scattered along rivers and the seacoast and concentrated near already abandoned or still actively developed resource fields. These settlements are supplied from the administrative centre of the region. At the same time, there are shift settlements generated by the interests of modern large mining business. The former generate a constant migration outflow from the region, while the latter, on the contrary, attract population not only from non-northern territories of Russia, but even from abroad (though on a temporary basis). Sometimes these two processes coincide in space, which results in a paradoxical situation: an urban-type settlement established in accordance with the Soviet paradigm of development of the Far North, ceases to exist, and a shift settlement is organized in its place or in its proximity.¹

It is worth noting that rural settlements in the conditions of the Far North are slightly more resistant to “migratory extinction” in comparison with urban-type settlements — at least the part of them which is populated by local small indigenous peoples. This is also facilitated by the fact that, in accordance with the Federal Law No. 399–FZ of 06.12.2011, even those representatives of small indigenous peoples who lead a nomadic lifestyle and, accordingly, have not been earlier “attached” to any particular address, were given the opportunity to register in one of the settlements on their nomadic route. This was done in order to maintain the system of public services and benefits provision, which is linked to the citizen’s place of registration.

Thus, the modern dynamics of population distribution in the Far North is shaped by Soviet era infrastructure, as well as by interests of large business, ethnic component of ter-

¹ See the case of the Varandey shift settlement (Nenets Autonomous Okrug), based on the site of the closed and resettled (in 2000) urban-type settlement of Varandey; the case of Maysky urban-type settlement (Chukotka Autonomous Okrug), located near the Mayskoye gold ore deposit and closed in 1991 — currently it is a modern shift settlement built near the deposit for its further development; the case of the Ust-Srednekan settlement (Magadan region) abolished in 2014 (by the time of abolition it had already received the status of urban-type settlement) and located near the functioning shift village of Ust-Srednekinsky, etc.
ritories, influence of negative demographic trends, administration issues (especially those related to the closure or change of status of settlements), and by the strategic plans of the federal centre.

**Research object**

The Far North of Russia occupies 51% of the country's area\(^1\), however, this territory is extremely unevenly inhabited, which is caused, primarily, by the historical features of its development.

Longitudinally, there are three subregions of the Far North: the European North, the North of Siberia and the Far Eastern North. The European North, bordering with Western Europe, is known to be *industrial* which, first of all, means “settled”. Development of this subregion began much earlier than that of Siberia and the Far East: when in the late XIX – early XX centuries the timber industry export complex in the European North grew intensively, while the North of Russia beyond the Urals continued to traditionally engage in hunting and fishing, which were a nomadic rather than settled way of life. Construction of the railway to Murmansk, laying of the White Sea — Baltic Canal, Severo-Pechora, and Soroksko-Obozersk railway lines, as well as rapid development of the Murmansk seaport provided the European North with additional development incentives in the twentieth century.

The Siberian and Far Eastern North received their industrial and infrastructure development during the Soviet era, that is less than a century ago. The Far North of Siberia was, in this case, in a more advantageous position: in the late 1940s within the ambitious transport project for the construction of the Transpolar Highway the first railway branches were laid there, which later served as the basis for the construction of the railway system of the Siberian North, following the active development of its oil and gas resources in the 1970s. Oil as the country’s main export commodity has for many years focused economic interests in the development of the Far North mainly in its Siberian subregion.

As for the Far Eastern part of the Far North, even now separate railway lines exist only in the territory of Sakhalin and in the southern regions of Yakutia (and the line to Yakutsk was built less than a decade ago). This makes the settlement system in the Far Northern parts of the Far East even less sustainable than in its Siberian and European subregions, because the settlements are more viable and functional when located in proximity to such infrastructural elements. Transport development contributes to the emergence of small settlements — crossings, stops — which may later grow into larger territorial units, and also reduces costs and develops the logistics of cargo delivery. As of now, the Far Eastern North, for the most part, can not take advantage of such positive effects. Moreover, the problematic accessibility of the Far Eastern regions of the Far North increases transport costs for all types of delivered products. At the same time, it is important to understand that the logistics of cargo movement is as follows: first delivery takes place to the administrative centres of the constituent entities, then from them to the district centres and only at the end does it reach the smallest settlements. This reduces the possibilities for diversification of traffic flows and leads to the cyclicity of delivery of products and periodic shortage of certain types of goods, which, in turn, leads to a rise in the cost of living in these territories and reduced viability of small settlements.

\(^1\) In this paper we define Far North as the territories located exactly within the Far North region without taking into account those equated to them within Russian legislative documents.
Thus, the current trends in the population distribution in the Far Eastern part of the Far North are due not only to its northern position *per se*, but also to significant differences from the other territories of the Far North of Russia. Hence, all the above-mentioned features of the northern territories are manifested here most clearly, because the region is located peripherally to the main part of Russia, as well as to its central metropolitan regions and to the largest transport arteries. At the same time, the population density in the north part of the Far East reaches minimum values at the country level due to its less spatial and historical development in combination with a huge area.

**Literature review**

Theoretically, this study bases mainly on the Russian research of the North. The number of foreign studies on the topic is limited due to the fact that they primarily concern the European part of the Far North of Russia, which is closest to the countries of Scandinavia and has similar natural and climatic conditions and history of development.

Existing studies most often address questions of the identification of the main stages in the development of the Russian Far North and Arctic, as well as the difficulty of defining clear boundaries of the Far North (Bezrukov 2015; Zinoviev 2016). Generally, three stages of development are distinguished: *imperial*, *Soviet* and *modern*; each of these stages has its own sub-stages. The understanding of the Far North differed at each stage due to different criteria for the allocation of this zone, climatic, geographical, or socio-economic.

Several studies are devoted to the demographic development of Russia with the special focus on the Far East or the Far North (Vishnevsky et al. 2017; Mkrtchyan 2004), while some others are entirely devoted to the demography of the Far East (Naselenie... 2018) and the Far North (Shaparov 2019). All of them justify two existing migration vectors: “east — west”, representing the drift of the population of the Far East to the European part of the country, and “north — south”, consisting in the continuing migratory outflow of the population from the territories of the Far North to the Russian “mainland” — the main settlement area.

As for the dynamics of the settlement system, there are studies devoted to the peculiarities of population settlement of the whole country (Chuchkalov, Alekseev 2019; Obedkov 2019; Fattakhov et al. 2019), which reveal general decrease in the number of urban-type settlements turning into rural ones, define the peculiarities of agglomeration processes, as well as some features common to all northern urban settlement systems (Obedkov 2018; Fauzer et al. 2018; Lazhentsev 2018). The latter include high level of urbanization of territories, minimum number of rural settlements and high role of the regional centre. An important general trend of the entire system of settlement of Russia is the gradual compression of the social and economic space, its compaction (Compression... 2010). Studies concerning the peculiarities of the Far Eastern part of the Far North (Leonov 2017; Kumo, Litvinenko 2019; Kumo, Litvinenko 2019) show some mistakes of the Soviet method of development of the region on the example of the Arctic territories. Characterized by even territorial distribution of production, this method relied entirely on large-scale state support and large financial and resource infusions. Economizing with such extensive development was achieved by scaling the territorial production complex. At the same time, permanent monoprofile settlements (based on mining entreprises) were connected via roads and numerous storage bases. Such a system of development vanished due to its inefficiency after the transfer to market economy.
Indirectly, the system of population settlement is considered in the analysis of the economic development of the north-eastern territories (Galtseva et al. 2020). Some studies (Pilyasov, Zamyatina 2019; Potentsial... 2014) investigate the issue of the paradigm shift in the Far North’s development, which is to reduce the need to accommodate permanent settlements on the territory of the Far North; these studies also recommend various foreign models of development of the North for its European, Siberian and Far Eastern parts.

Among the studies of the foreign North and Arctic, there are works comparing similar natural and climatic conditions of the North of Russia with the United States and Canada, in particular with Alaska (Szhatie... 2020; Blagodeteleva 2017). The overseas Far North and Arctic are also highly urbanized, but the share of the urban population is smaller than in the Russian North. At the same time, there the northern cities are larger, and they are still growing, while in Russia the number of northern cities decreases. In the case of Alaska and Canada, this is due to a different specialization of cities — they are more focused on oil and gas production, while Russian cities more often are incorporated into the mining complex. An exception, most similar to the North American model, are the cities of Yamalo-Nenets Autonomous Okrug and Nenets Autonomous Okrug, where gas and oil are produced.

Despite the great interest in the study of the territories of both the Far North and the Far East in the XXI century, in our opinion, the issues of post-Soviet transformation of the settlement system of the population of these territories and of the possible consequences of such transformation gain little attention, which explains the choice of the subject and purpose of this work.

**Research Methodology**

The study covers the period starting from the last Soviet census (All-Union Population Census 1989) and going up to the present moment (2020). For several indicators, only preliminary data were available for 2020 at the time of our research; in these cases, we provide estimates for 2019. To confirm the stability of the identified trends, we describe the dynamics of some indicators in the periods between the two past post-Soviet censuses (All-Russian Census of Population 2002, All-Russian Census of Population 2010) along with a more detailed analysis for 2020.

Within the study, we analyze the dynamics of the population and the number of settlements of various types located in the regions of the Far Eastern part of the Far North of Russia. Apart from that, we follow the main characteristics of migration flows in the specified territory on the basis of Rosstat data. Information on the differences in statistical information and the actual population of individual settlements of the studied region was gathered from open Internet sources (news portals of regions and municipalities), as well as from official documents of administrations of separate territorial units that are openly available.

To ensure the comparability of data for the entire period under study, the boundaries of the administrative-territorial division of the constituent entities of the Russian Federation and attribution to the regions of the Far North are taken as of 2020. Thus, in this paper the Far Eastern part of the Far North includes Kamchatka Krai, Magadan Oblast, Chukotka Autonomous Okrug, the Republic of Sakha (Yakutia), as well as the regions of Khabarovsk Krai (Ayano-Maysky and Okhotsk) and Sakhalin regions (Kuril, North Kuril, South Kuril, Okha and Nogliki).
The carcass of population settlement structure includes, above all, urban settlements. Its role is particularly pronounced in Far Northern regions with a high percentage of urbanization due to obvious difficulties of farming in local climatic conditions and high prevalence of employment in specialized – often even monospecialized – extractive industries. For this reason, to achieve the clearest visual representation of the spatial dynamics of the population settlement system, the authors use maps. The freely distributed geoinformation system QGIS Desktop 3.10.12 is used as a mapping tool; the mapping is based on a freely available digital map of Russia from the GADM portal.

Results of the study and discussion

Strengthening sparsity of population settlement and change of the settlement structure

The settlement carcass in the Far Eastern part of the Far North continues to dwindle, despite the fact that the crisis 1990s, which gave rise to the super-fast migration decline of the population of the northern regions, have long gone (see. Fig. 1). This is especially noticeable in the Chukotka Autonomous Okrug, the Kamchatka Krai and the Republic of Sakha (Yakutia), where the disappearance of a significant number of urban-type settlements along the northern borders of the regions more clearly outlined the southern settlement focal points on the map of regions.

The dispersed character of settlement was typical in the Far North, but over the observation period, the sparsity of the settlement foci became much more noticeable (see, for example, the mapping of the Yakutia territory). In the Magadan Oblast lines of small urban settlements became clearer on the map: they stretch along rivers and small streams, bearing placer gold for mining, and along federal highway P504 Kolyma. Urban-type settlements that were remote from these lines were the first to disappear from the map of the region’s urban settlement.

The identified trend of population concentration correlates with the nationwide dynamics (see Table 1). Generally, in Russia, there has been a small increase in the number of cities, a relatively small decline in the number of rural settlements (compared to their total number), and global “dissipation” of urban-type settlements from the settlement system. However, as already noted above, in the case of the Far North of Russia and especially the Far Northern part of the Far East, the consequences of such processes are much more acute – due to the original differences in the quantitative structure of settlements by type and general population sparsity of the territory. The importance of urban-type settlements for the settlement system of the Far North is much more critical than for Russia as a whole; in 1989, the share of urban-type settlements in the total number of urban settlements of the country accounted for 68%. In the Far North, however, this figure mounted up to 81%, and in the Far Eastern part of the Far North it accounted for 87%. Therefore, despite the fact that the rate of disappearance of urban-type settlements from the map of the Far North roughly corresponded to that of nationwide (from 1989 to 2020, the number of urban-type settlements across Russia decreased by 46%, and across the Far North — by 48%), the consequences of this process for the country as a whole and for the Far North of Russia are by no means the same.

Figure 1. Urban settlements of the Far Northern areas of the Far East in 1989, 2002, and at the beginning of 2020 (left to right). Source: compiled according to 1989 and 2002 Census data and vital population statistics data for 2020.
The foundation of urban-type settlements in the northern territories of the Far East occurred mainly near mineral deposits, in rarer cases — near the seacoast. In most cases, they were settlements of workers founded to develop gold and silver deposits (in Magadan Oblast — Dukat and Burkhala settlements, etc.; in Chukotka Autonomous Okrug — Baranikha and Aliskerovo settlements, etc.; in Republic of Sakha — Ust-Nera and Zvezdochka settlements, etc.; in Kamchatka Krai — Ossora settlement, etc.; in the Far Northern area of Khabarovsk Krai — Okhotsk settlement), oil and gas deposits (in the Far Northern area of the Sakhalin region — Neftegorsk and Nogliki settlements), coal deposits (in Magadan region — Kadykchan settlement, etc., in Republic of Sakha — Zyryanka and Sangar settlements, etc.), diamond mines (Republic of Sakha — Almazniy settlement, etc.). Many such settlements were later transformed into urban-type settlements, and some even became cities (like, for example, the city of Mirny in Yakutia, which was also founded as a settlement of workers, and in 1959 received the status of a city).

However, the settlements founded for the extraction of raw materials are very unstable due to the exhaustion of the resource base, which leads to their elimination or change of status to a rural settlement which briefly increases the period of their existence. In 1989, on the territory of the Far Eastern part of the Far North there were 140 urban-type settlements. By 2020, the number of settlements almost halved (74 remained, among which 8 urban-type settlements had zero population, i.e., actually existed only in rosters). The decline in the number of urban-type settlements was caused either by their liquidation or conversion into a rural locality, or (rarely) transformation into a city or by merging with another locality (see Table 2).

The population from closed urban-type settlements (if they do not leave the areas of the Far North), mostly resettle in the regional administrative centres or urban settlements that have development prospects. As a rule, the latter include those, the basic industry of which will not soon cease to function, meaning those with the large reserves of the mineral deposits.

Coastal urban-type settlements turn out to be a little more sustainable (for example, Tiksi and Provideniya urban-type settlements), since they often have a mixed profile of specialization and are at the same time seaports and fishing centres. Such a structure retains internal

Table 1. Comparative dynamics of the number of urban and rural settlements in Russia, in the Far North of Russia, and in the Far Eastern part of the Far North, 2002–2020

<table>
<thead>
<tr>
<th></th>
<th>Russia</th>
<th>Far North</th>
<th>Far North of the Far East</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cities</td>
<td>Urban-type settlements</td>
<td>Rural settlements</td>
</tr>
<tr>
<td>1989</td>
<td>1 037</td>
<td>2 192</td>
<td>152 922</td>
</tr>
<tr>
<td>2002</td>
<td>1 098</td>
<td>1 842</td>
<td>155 289</td>
</tr>
<tr>
<td>2010</td>
<td>1 100</td>
<td>1 286</td>
<td>153 124</td>
</tr>
<tr>
<td>2020</td>
<td>1 116</td>
<td>1 177</td>
<td>153 356</td>
</tr>
<tr>
<td>Dynamics 1989–2020</td>
<td>7.6%</td>
<td>-46.3%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

Table 2. Reduction of the number of urban-type settlements in the regions of the Far Eastern part of the Far North, 1989–2020, by reason

<table>
<thead>
<tr>
<th>Region</th>
<th>1989</th>
<th>2020</th>
<th>Lique-</th>
<th>Converted</th>
<th>Converted</th>
<th>Merged</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>dated</td>
<td>to rural</td>
<td>into a city</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>settlements</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magadan Oblast</td>
<td>34</td>
<td>23</td>
<td>6</td>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Chukotka Autonomous Okrug</td>
<td>18</td>
<td>5</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sakha Republic</td>
<td>67</td>
<td>41</td>
<td>12</td>
<td>10</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Kamchatka Krai</td>
<td>12</td>
<td>2*</td>
<td>1</td>
<td>9</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Far Northern Districts of the Sakhalin Region</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Far Northern Districts of the Khabarovsk Krai</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total for the Far Northern part of the Far East</td>
<td>140</td>
<td>74</td>
<td>30</td>
<td>30</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

*Note: Including a military urban-type settlement Vulkanny, which was not previously included in the data.

Source: compiled according to 1989 Census data and vital population statistics data for 2020.

As for rural settlements of the Far Northern part of the Far East, here the relatively small, in comparison with urban-type settlements, total reduction of their number distributes heterogeneously across regions. Thus, in 2002–2020, the total number of rural settlements in the Far Eastern part of the Far North decreased by 10.2%, while in the Republic of Sakha (Yakutia) and Kamchatka Krai the decrease was slightly more than 1%, and in the Magadan Oblast, almost half of all rural settlements disappeared during this period (see Table 3).

Table 3. Number of rural settlements in the Far Eastern regions of the Far North, 2002–2020

<table>
<thead>
<tr>
<th>Region</th>
<th>2002</th>
<th>2010</th>
<th>2020</th>
<th>Dynamics 2002-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magadan Oblast</td>
<td>89</td>
<td>55</td>
<td>47</td>
<td>-47.2%</td>
</tr>
<tr>
<td>Chukotka Autonomous Okrug</td>
<td>57</td>
<td>38</td>
<td>38</td>
<td>-33.3%</td>
</tr>
<tr>
<td>Kamchatka Krai</td>
<td>83</td>
<td>82</td>
<td>82</td>
<td>-1.2%</td>
</tr>
<tr>
<td>Republic of Sakha (Yakutia)</td>
<td>590</td>
<td>586</td>
<td>582</td>
<td>-1.4%</td>
</tr>
<tr>
<td>Far Northern Districts of the Khabarovsk Krai</td>
<td>35</td>
<td>30</td>
<td>23</td>
<td>-34.3%</td>
</tr>
<tr>
<td>Far Northern Districts of the Sakhalin Region</td>
<td>47</td>
<td>37</td>
<td>37</td>
<td>-21.3%</td>
</tr>
<tr>
<td>Total for the Far Northern part of the Far East</td>
<td>901</td>
<td>828</td>
<td>809</td>
<td>-10.2%</td>
</tr>
</tbody>
</table>

Source: compiled according to 1989 Census data and vital population statistics data for 2020.
We should also note that 40% of villages and urban settlements of the Magadan Region have zero population, and another 20% have a population of under 50 people, including those whose population exists only in rosters (for example, in Chaybukha village as of January 1, 2020, 44 residents were registered, but in fact, as follows from the published municipal data, they did not live there).

**Migratory depopulation of territories and the “southern drift”**

Official statistics continue to record a decline in the permanent population of the Far Eastern part of the Far North. The decline is formed by both stable migratory outflow and negative values of natural growth in some of its regions (especially in the Magadan Oblast and the territories of the Far North in the Khabarovsk Krai). At that, the contribution of the migration outflow significantly exceeds that of natural population decline, observed in most Russian regions in recent decades (see Fig. 2).

The most significant reduction in the population of the Far North was observed in the crisis 1990s: for example, the number of people residing in Chukotka Autonomous Okrug went down by 67% between 1989 and 2002, in Magadan Oblast — by almost 54%, and in Kamchatka Krai — by 24% (see Fig. 3.). Despite the slowdown in the rate of depopula-

![Fig. 2. Comparative dynamics of natural (NG) and migratory (MG) growth by regions of the Far Northern part of the Far East, 2002–2019, ‰. *Note: Data not available for the districts of the Far Northern part of Khabarovsk Krai and Sakhalin Oblast in 2002–2009. Source: compiled on the basis of information from the Database of Municipal Formations of the Federal State Statistics Service.](image)
tion in these territories (in 2010–2019, the population of the Far Northern part of the Far East declined by slightly more than 1% of the population, while in 1989–2002 the decrease amounted for almost 27%), in some regions they are still very high: thus, the regions of the Far North of the Khabarovsky Krai lost over 22% of the population in 2010-2019, and the Magadan Oblast — more than 10%. During this period, only the Republic of Sakha managed to slightly increase its population (by 1%) due to consistently positive natural growth; however, in 2019, its population was 11% smaller than in 1989.

Fig. 3. Dynamics of average annual population of regions of the Far Northern part of the Far East, 1989–2019, thousand people. Source: compiled according to 1989, 2002, and 2010 Census data, vital population statistics data for 2020 and information from the Database of Municipal Formations of the Federal State Statistics Service.

The population leaves primarily the most “high-latitude” settlements (see. Fig. 1), those distinguished by a maximum distance from the administrative centres of the regions, and hence by lowest transport accessibility. This is especially evident for mono-resource urban-type settlements: the farther north the settlement is, the higher the probability that in case of a decrease in the profitability of its functioning or complete exhaustion of the nearby mineral deposit it will be completely eliminated without changing status to a rural locality (see Table 4), since the change of status due to the loss of the basic industry does not affect the logistics of product and basic goods delivery and the connection with the mainland. The remaining urban-type settlements of the more northern areas are now depopulating much faster than the southern ones (which is clearly seen by the size of markers in Fig. 1).

A similar trend is observed in relation to rural settlements: thus, if out of 107 villages located in the Arctic zone of Yakutia, the 2010 census registered 11 completely deprived of population, that is, in fact, one in ten; ten years later statistics registers 18 such settlements
and another 4 with a population of under 10 persons, but which were, in fact, also abandoned (Decree… 2020).

Thus, there is a concentration of permanently resident population in the southern parts of the regions, a kind of *southern drift* in population distribution in the Far Eastern part of the Russian Far North.

“Phantom” settlements and the boom of shift settlements

When studying the pattern of population settlement for the Far North only according to official statistics, it is possible to underestimate a rather important and very specific trend in the system of settlement of these territories, which was mentioned in the introduction, namely, the clash of two paradigms of development of the northern territories — the Soviet “planned” and the modern “corporate”. Official statistics are focused on accounting for indicators of development of the northern territories according to the Soviet model, that is, on accounting only for permanent settlements and residents registered in them. As a result, currently, settlements that are, in fact, already abandoned still remain on the map of the far eastern part of the Far North — urban-type settlements and rural settlements with zero population or with declining population that has reached minimum figures (5 to 10 persons), facing abandonment in the nearest future. On the other hand, the “corporate” development of the northern territories in the form of shift settlements, the population of which (albeit replaced within the shift periods, but nevertheless constantly held at about the same values) can reach a thousand or more people, which is rather significant in the Far North. In general, the Ministry for the Development of the Far East and Arctic estimates the number of shift workers in the Far Eastern regions of the country at 150 thousand people (Gogolev 2020). Meanwhile, in the official statistics of population distribution by settlements of different types, shift settlements are currently completely disregarded.

### Table 4. Dependence of the disappearance of settlements of the Far Eastern part of the Far North on increasing the latitude of their location on the example of urban-type settlement, 1989–2020

<table>
<thead>
<tr>
<th>Location by latitude</th>
<th>Number of urban-type settlements, 1989</th>
<th>Number of urban-type settlements, 2020</th>
<th>Number of closed and abandoned urban-type settlements over 1989-2020</th>
<th>Share of closed and abandoned settlements in the total number of urban-type settlements, 1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>below 55º latitude north</td>
<td>12</td>
<td>3</td>
<td>2</td>
<td>17%</td>
</tr>
<tr>
<td>55-60º latitude north</td>
<td>31</td>
<td>16</td>
<td>4</td>
<td>13%</td>
</tr>
<tr>
<td>60-65º latitude north</td>
<td>68</td>
<td>34</td>
<td>18</td>
<td>26%</td>
</tr>
<tr>
<td>65-70º latitude north</td>
<td>20</td>
<td>9</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>above 70º latitude north</td>
<td>9</td>
<td>4</td>
<td>4</td>
<td>44%</td>
</tr>
<tr>
<td>Total for the Far Northern part of the Far East</td>
<td>140</td>
<td>66*</td>
<td>38</td>
<td>27%</td>
</tr>
</tbody>
</table>

*Note: Excluding the 8 urban-type settlements with zero population still existing in 2020 (they are also classified as closed and abandoned).
Source: compiled according to 1989 Census data and vital population statistics data for 2020.*
The shift method of settling the northern territories, the popularity of which began to grow with the discovery and development of oil and gas fields of the Siberian Far North, is currently experiencing its boom. When considering the economy of settlements in the context of third-generation Lowry models, that is, as a combination of the basic sector, service sector and the household sector, the shift method, which does not imply resettlement to the workplace of the employee’s family, enables economizing on the development of the settlement’s infrastructure by excluding one of the three sectors, that is, the household sector. And the service sector in this case is also presented in a rather stripped-down form, especially since until now the status of shift settlements is hardly regulated at the legislative level, standards for the development of social infrastructure are not prescribed for them, and they, in principle, because of their “invisibility” in official settlement statistics, are poorly integrated into the infrastructure provision of lives in the regions concerned. This problem was especially manifested during the COVID-19 pandemic, when the medical infrastructure of the “shift” regions of the Far North served shift workers as well, which was not originally its purpose. As a consequence, at the end of 2020, the issue of legal regulation of the functioning of shift settlements was raised first at the regional and then at the federal level.

The shift method, which proved its economic efficiency, in addition, has other attractive features: a relatively short stay in the extreme conditions of the Far North (especially in its arctic zone) is less traumatic to the human health. Therefore, at present, the northern outskirts of the country are rapidly becoming a territory of shift settlements. This leads to the fact that labour resources are increasingly attracted from beyond, that is, employees work in shifts and come from other regions of Russia (mainly from the territory of the European part). The higher is latitude and harder the region is to access, the more in demand the concept of shift settlements is. This is visible in the structure of the incoming population. On average in Russia, the share of arrivals for a period of no more than a year was 33.9% in 2019, in the Far Eastern Federal District — 36.4%, in Yakutia — 34.8%. But in the more remote regions of the Far East, this share exceeds both the Russian average and the average for the federal district. In the Magadan Oblast and Kamchatka Krai, it amounted to 46.6% and 45% respectively and reached its peak in the Chukotka Autonomous Okrug — 64% (the highest in the country).

We shall illustrate the actual current situation on the example of the latter discrepancy of official statistics of population settlement in the region. The basis of the economy of the Chukotka Autonomous Okrug is the mining industry: its subsoil contains reserves of non-ferrous metals (including the richest deposits of ore and placer gold), black and brown coal and hydrocarbons. The most actively developed gold deposits are located in hard-to-access areas of the county, and therefore their development involves the functioning of shift settlements in close proximity to mines (see Table 5).

The number of workers living in shift towns totals in between a few dozen and several hundred people. Several hundred people in the conditions of Chukotka, the population of which was about 50 thousand people in 2020, are quite significant figures. And even more so if considering separate areas, such as Chaunsky, where total population of the four preserved permanent settlements (town of Pevek and village settlements Ayon, Billings, and Rytkuchi) a counts about 5.3 thousand people. At the same time, the list of shift settlements of Chukotka Autonomous Okrug is not limited to mining: near the West Ozerny gas field LLC “Sibneft Chukotka”, engaged in its development, organized a small shift settlement for a shift of several dozen people, LLC “Beringpromugol” has arranged a shift village of Alkatvaam for more than 100 of its workers, etc. Taking into account that 4/5 of all shift employees of
the Chukotka Autonomous Region are migrants coming out of the region, it is obvious that the real population of the region is currently much higher than that reflected in statistics, and a significant proportion of it is made up of shifts that constantly take over one another. Shift villages, thus, to some extent level the presence of so-called “phantom” settlements, i.e. urban-type settlements and rural settlements with zero population, on the map of the Far North. Conversely, sometimes the depopulation of settlements seen in statistics is not real due to the shift infrastructure. For example, in Chaunsky district of Chukotka Autonomous Okrug there is an officially closed village of Komsomolsky, depopulated in 1998. Nevertheless, on the websites of recruiting companies one can encounter job offers within this settlement, as the production base of LLC Association of miners “Chukotka” is based there. A similar situation can be observed in the urban-type settlement Leningradsky of Iulta district, which is the base of “Shakhtar” miners association. Both companies are engaged in the mining of gold and develop goldfields in close proximity to these settlements. Such use of abandoned sites can be seen as a “budget version” of corporate shift settlements.

**Conclusion**

In general, the Far Eastern part of the Far North is currently undergoing a transformation of the settlement system. Demographic and economic shocks of the post-Soviet period revealed its failure in modern conditions, so the current changes should be seen as a kind of search for a new development trajectory. Uniform development of the territory with distinctly

### Table 5. Shift settlements near gold deposits of Chukotka Autonomous Okrug

<table>
<thead>
<tr>
<th>№</th>
<th>Shift settlements of:</th>
<th>Location of the deposit</th>
<th>Deposit Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>«Kupol» Deposit</td>
<td>Anadyrsky District</td>
<td>CJSC “Chukotskaya Mining and Geoloical Company” (part of Kinross Gold Corporation)</td>
</tr>
<tr>
<td>2</td>
<td>«Valunistoe» Deposit</td>
<td>Anadyrsky District</td>
<td>«Rudnik Valunisty» LLC (part of Highland Gold Mining Ltd)</td>
</tr>
<tr>
<td>3</td>
<td>«Dvoynoe» Deposit</td>
<td>Chaunsky District</td>
<td>«Severnoe Zoloto» LLC (part of Kinross Gold Corporation)</td>
</tr>
<tr>
<td>4</td>
<td>«Mayskoe» Deposit</td>
<td>Chaunsky District</td>
<td>“Mayskoe Golden ore company” LLC (part of “Polymetal” JSC)</td>
</tr>
<tr>
<td>5</td>
<td>«Karalveemskoe» Deposit</td>
<td>Bilibinsky District</td>
<td>JSC “Karalveem Mine” (part of the Auramine Resources Group)</td>
</tr>
<tr>
<td>6</td>
<td>«Kekura» Deposit</td>
<td>Bilibinsky District</td>
<td>Base Metals CJSC (part of Highland Gold Mining Ltd)</td>
</tr>
</tbody>
</table>

Shift settlements equipped to prepare the deposit for industrial development

<table>
<thead>
<tr>
<th>№</th>
<th>Shift settlements of:</th>
<th>Location of the deposit</th>
<th>Deposit Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>«Klyon» Deposit</td>
<td>Bilibinsky District</td>
<td>Klyon LLC (part of Highland Gold Mining Ltd)</td>
</tr>
<tr>
<td>8</td>
<td>«Peschanka» Deposit</td>
<td>Bilibinsky District</td>
<td>LLC Mining Company “Baimskaya” (part of KAZ Minerals)</td>
</tr>
</tbody>
</table>

*Source: compiled by the authors.*
Chaika EE, Mizerovskaya UV: Modern features and tendencies of population settlement in the Far Eastern regions...

...distinguished centres — cities and towns of urban type — is a tendency of the past. Now it is being replaced by the concept of preservation of several pillars located mainly in the area close to the southern fringes of the Far North zone, that is, a territory more accessible in terms of transport and less severe, in comparison to the Arctic fringes of the Far North, climatic conditions. At the same time, on the northern borders of the Far North zone, shift settlements are created, which are purely utilitarian in nature and are intended not for permanent residence, but only for development of mineral deposits.

The “north — south” migration impulses are still too strong for the redistribution of the population to take place only within the borders of the territories of the Far North: the migration flows going to the “mainland”, i.e. outside the northern territories, which emerged in the 1990s, are still present. In the 1990s, these flows were due primarily to the crisis deindustrialization and the termination of development programmes in the North; now, in addition to the inertia component of the migration vector, the migration is driven by the above-mentioned expansion of the shift method of economic development. Resettlement programmes launched in the mid – 1990s (Decree of the Russian Federation Government No. 700 of 10.07.1995) assessed that 30% of the Far Eastern northern population were “superfluous”. It was these programmes that gained attention to the fact that “superfluous” population mostly consisted of pensioners and young people, i.e. the very sector of households that is currently not presented in the development of shift settlements.

Another important fact concerns the inconsistency of state programmes for the resettlement of the population from the regions of the Far North (Federal Law No. 228–FZ; Decree of the Russian Federation Government No. 879 of 10.12.2002) with programmes aimed at attracting the population to the regions of the Far East, where over 73% of the territory belong to the regions of the Far North (excluding equated ones). That is, it turns out that the measures taken by the Russian government are aimed precisely at the macroregions of the Far East and the Far North, and not specifically at the place of their intersection. At the same time, the trend for the development of the Arctic chosen by the state, somehow bypasses the Arctic territories of Yakutia and Chukotka Autonomous Okrug, concentrating more on the European North and North of Siberia with its oil and gas fields. The existing programme for the resettlement of compatriots (Presidential Decree No. 1289 of 14.09.2012) is designed to improve the demographic situation in the regions of Russia, and the Far Eastern regions (including areas of the Far North) are considered priority territories to attract compatriots. However, the annual arrival to the territory of the Far Eastern part of the Far North under this programme remains low due to the fact that the number of people wishing to live in harsh climatic conditions is small. Another support measure — the Far Eastern hectare programme initiated in 2016 (Federal Law No. 119–FZ, of 01.05.2016), also shows very moderate effectiveness. Although it aims to attract the population from the territories of the European part of Russia, among the participants of this programme 86% are residents of the Far Eastern Federal District¹. In fact, this programme can only serve as a factor slowing down migration. At the same time, in the Far North the programme encounters some difficulties with its implementation, consisting in contradiction between harsh natural and climatic conditions with the main goal of obtaining a hectare, which is farming. According to the

Ministry for the Development of the Far East and Arctic\(^1\), most of the land was obtained in the southern territories of the Far East, while the number of recipients in the northern regions is small (the Sakha Republic is an exception). Neither programme relieves migration outflow, but slightly smoothen it out. Another way to both retain and attract the population should be the programme of preferential “Far Eastern” mortgages (Decree of the Russian Federation Government No. 1609 of 07.12.2019). However, under this programme, it was initially only possible to purchase primary housing in urban or rural areas and secondary housing in rural areas. At the same time, the demand for the programme was low in the Far Northern part of the Far East due to the slow construction rate of new residential complexes and population reluctance to move to the countryside. This situation is particularly acute in the Magadan Oblast and the Chukotka Autonomous Okrug, where the commissioning of new buildings has not been carried out for a long time, which has led to temporary expansion of the programme to the secondary market in September 2020 in these entities.

Thus, the southern drift and shift settlements are, in fact, a logical consequence of the developmental problems of the Far Eastern part of the Far North and, to some extent, an adaptation of the local settlement system under their influence. This trajectory of the territorial development of the region can produce new problems and questions. For example, some studies show the negative effect of a short stay on the territory (shift), which forms a consumer attitude towards the environment (Nuikina 2013). Such effects pose a threat to the fragile ecosystem of the North and should be taken into account when developing the socio-economic policy of the region.

Reference list


Other data sources:


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