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### Analysis of rural ethnosettlement in Balakan administrative region based on GIS method

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#### Keywords

Balakan district  
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#### Abstract

In the article, the analysis of the rural ethnosettlement in the Balakan administrative region based on the GIS method was studied. The main purpose of the research work is to study the national composition of the population, their distribution by residential areas and the modern problems of the villages in Balakan district located in the north-western zone of the country using the GIS method. In order to carry out the research work, fund materials were analyzed, field research works were carried out in order to get to know the local situation closely, and space images of the area were obtained. The obtained data were processed in the ArcGIS program. As a result of the conducted research, it became clear that a serious polarization process took place in the ethno-settlement system of the region. That is, although villages with a large demographic potential play a major role in their settlement, some villages are distinguished by their weak demographic potential. Some villages have no permanent population. As a result of uneven socio-economic and demographic development within the region, the population of some villages either increased or decreased at a slow pace. This was related to regular migration processes in the region. In order to closely study ethno-settlement in the study region, settlement maps were prepared. At the same time, a proposal plan was prepared in order to eliminate the problems that arose.

#### 1. Introduction

The north-western zone of Azerbaijan is one of the areas distinguished by the diversity of its ethnic composition. Representatives of various minority ethnic groups have settled here. These areas, included in the Shaki-Zagatala economic region, mainly cover mountainous regions (Huseynova 2021). In this region, which is mainly surrounded by mountainous areas, only the population of Balakan district mainly settled in the areas up to 500 meters. Balakan administrative district, which is a part of Shaki-Zagatala economic district, is located in the far north-western part of the country. This administrative region with a total area of 923 km<sup>2</sup> is surrounded by the Russian Federation from the north, the Republic of Georgia from the west and southwest, and the Zagatala region of the Republic of Azerbaijan from the east. According to statistical data, the population of the region is 632,9 thousand people (Demographic indicators of Azerbaijan 2022). In total, there are 1 city, 1 settlement and 57 rural settlements within the administrative district. The population of the region is one of the areas with a rich ethnic composition. Thus, the

main part of the population in the research area, i.e., 72.7%, was made up of Azerbaijanis, 26.6% of Avars, and the rest of the population consisted of Inghilois, Russians and representatives of other minority ethnic groups. The study of settlement issues in this region, which is distinguished by the diversity of its ethnic composition and is located in the remote border zone of the country, and the mapping of these data are of special political and strategic importance. The collection of such information can play a significant role in solving the settlement problems that arise in the area now and in the future.

#### 2. Method

The research work consists of stock materials of the database, processing of space images and field studies. In order to collect information about the region's population, ethnic composition and settlement issues, it was closely acquainted with the research works of local and foreign researchers who have been conducting research in this field for many years. As examples of such researchers, we can show Eminov (2005), Javadov (2000), Ayyubov (2015), Adamovich (2022), Liu (2017),

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Mihai (2020) and others. The second data base of the research consists of space images provided by the Azerbaijan Space Agency. On the basis of those space images, it was possible to see how and during which period the settlements changed, and in which parts the population was mainly concentrated. A field trip to some villages of the administrative region was organized in order to get to know the research area more closely and to learn the reasons for the change in settlement. These villages are mainly rural settlements densely populated by minority ethnic groups. At this time, questionnaires were distributed among the population, and the last collected materials were analyzed.

### 2.1. Settlement and ethnic composition of the region

Balakan administrative region covers altitudes from 140 meters to 3100 meters above sea level. However, the population is mainly settled in the mountainous areas. Especially the Ganikh-Ayrichay valley, which has a rich agricultural potential, is more densely populated by the population. The highest settlement of the region is Mazymchay village located at 558 meters.

As we mentioned earlier, Avars have a special role in the ethnic composition of the region. Avars are densely settled mainly in Sharif, Yeni Sharif, Shambul, Meshashambul, Ajiliqbina, Katekh and a number of villages of the region. Ititala village of the region is a village inhabited by Inghilois.

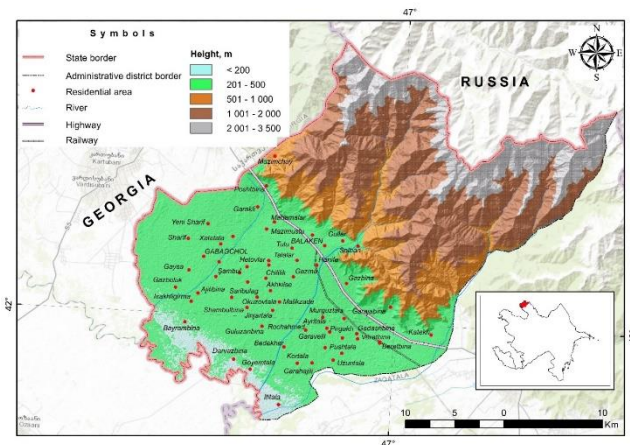
### 2.2. Population distribution by altitude zones

If we look at the distribution of the population by altitude zones (Table 1), although there are 4 rural settlements up to 200 meters in the region, only Ititala village has a permanent population. The other three villages - Goyamtala, Darvazbina and Bayrambina - have no population. The region has only one village located above 500 meters, which is the village of Mazymchay, which has a medium demographic potential and its population is growing at a slow pace.

As can be seen from the table, the main part of the rural population and rural settlements of the region is located within the 200-500 meter belt. However, the population is unevenly distributed within this belt (Figure 1).

**Table 1.** Change of settlements by altitude zones

Altitude zones	1999		2009		Indicator of increase or decrease of the population (%)
	Number of villages	Number of population	Number of villages	Number of population	
0-200	4	2029	4	2240	+10,4
201-500	52	71457	52	76913	+7,6
500 and more	1	351	1	358	+2,0
Total	57	73837	57	79511	+7,7



**Figure 1.** Map of the change of settlements by altitude zones

### 3. Results

Uneven socio-economic and demographic development of the region has also affected the proximity, demographic potential and density of settlements. Thus, there are villages with both large and weak demographic potential in the region (Eminov 2021). Unequivocally, villages with a large demographic potential are located close to the district center and to each other. Villages belonging to this group attract

attention due to their proximity to highways. They also form large rural agglomerations.

Villages with weak demographic potential are mostly located far from the city center and on highways. The income level of the population in these villages is low. This results in the intensification of migrations in those villages and, as a result, their population decreases or increases at a slow pace.

### 4. Discussion

Large villages located close to each other in the region have created rural agglomerations. We can group these rural agglomerations in the following groups (Fig.2):

Rural agglomerations around the city of Balakan - Hanifa village (4693 people), Gazma (2516 people), Talalar (3098 people), Tulu village (5816 people), Mahamaral village (4276 people), Gullar village (5882 people) .)

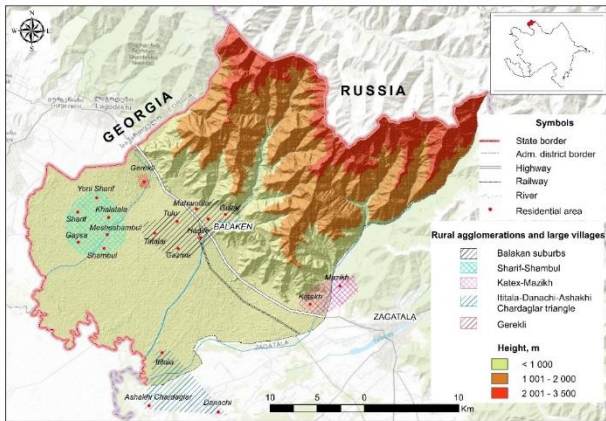
Sharif-Shambul village agglomerations - Sharif village (3293 people), Yeni Sharif village (3118 people), Khalatala (2728 people), Meshashambul village (2498 people), Gaysa village (3602 people)

Katekh-Mazikh village agglomeration - Katekh village (7134 people), Mazikh village (1602 people Zagatala district)

Ititala (2240 people) - Ashagi Chardakhlar (1093 people Zagatala district)-Danachi (7071 people Zagatala district) triangle

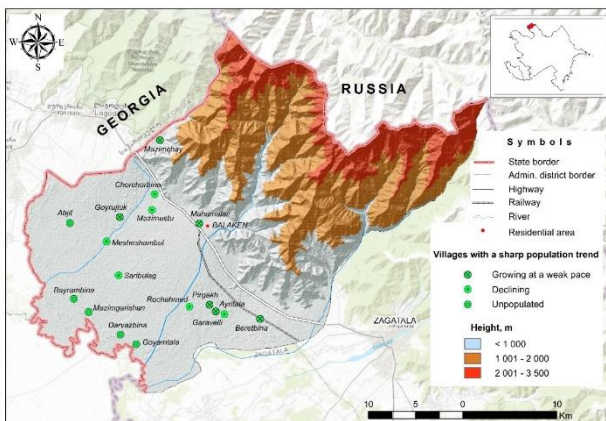
Garakli village agglomeration - Gerakli village (3531 people).

The main part of the population in these villages was made up of Avars.



**Figure 2.** Rural agglomerations

Although some villages of the region have formed large agglomerations, a decrease in the population has been noted in some villages. Thus, in 1999-2009, the population of 6 villages in the region decreased, 4 villages had no population, and 2 villages had less than 100 people (Fig 3.).



**Figure 3.** Map of threatened, endangered and extinct villages

The main reason for the population decline in such villages in the region is due to the lack of sources of income and the migration of the population for the purpose of earning or looking for work (Huseynova 2022). In this case, the migration process mainly involves the young population. This also results in a decrease in natural increase due to the decrease in the number of young people in the villages.

## 5. Conclusion

Based on the results of the conducted research, it can be said that the population is unevenly distributed in Balakan administrative district. Within the administrative district, the population is mostly settled in the height zone of 200-500 meters.

Although the large villages of the region have united to form large rural agglomerations, small villages have started to decline.

The main reason for the decline of small villages is the lack of necessary socio-economic conditions for providing employment to the population in such villages.

The lack of permanent settlement in the villages located in the border zone and the decrease in population can cause serious problems in terms of ensuring the security of the border zone.

## References

- Demographic indicators of Azerbaijan. (2022). State Statistical Committee of Azerbaijan, 557 p.
- Eminov, Z. N. (2021). Demographic development of villages in the Republic of Azerbaijan and problems of the settlement of the rural population, 552 p.
- Huseynova, B. A. (2021). The tendency and improvement of settlements of ethnic minorities on altitude zones in the rural areas of Shaki-Zagatala economic-geographical region. *Journal of Young Scientist*, 2, 112-120.
- Huseynova, B. A. (2022). Participation of ethnic minorities living in the north-western regions of the republic of Azerbaijan in the migration process. *Geographical bulletin*, 3(62), 45-57. <https://doi.org/10.17072/2079-7877-2022-3-45-57>.