



Peculiarities of Distribution of Population, Settlements and Economic Activities by Altitude Landscape Belts at the North-Eastern Slopes of the Greater Caucasus

Laman Hasanaliyeva

Senior lecturer,

Baku State University, Azerbaijan
Z.Khalilov str. 23, Az1148, Baku, Azerbaijan

ABSTRACT

The paper deals with the analysis of functional characteristics of location of settlements and distribution of population, as well as the existing economic activities in height zones with different landscapes. It was determined that economic activities are distributed uneven in the research territory in connection with the existence of different local environmental condition. As the carried study shows, the higher concentration of population is characteristic for the Pre-Caspian territories and higher mountainous areas rather than upland plains and lower mountainous areas. It is also revealed that in mountainous areas, the population is settled in depressions and hollows, or inclined terraced slopes of river valleys with more favorable relief and environmental condition for dwelling.

Keywords: *Altitude Landscape Belts, Rural Settlement, Mountainous, Plain, Distribution of Population*

1. INTRODUCTION

The research object of this study is the north-eastern part of the Greater Caucasus within the territory of Azerbaijan. It includes the administrative regions of Guba, Gusar, Khachmaz, Devechi and Siyazan where distribution of population is uneven depending on altitude landscape belts and the related environmental condition. In the north-eastern slopes of the Greater Caucasus, the distribution of settlements and the location of the population, as well as the functioning of economic areas in accordance with the spatial differentiation of landscapes have been shaped directly under the influence of environmental and geographical condition (climate, relief, lithological composition, and hydrological and hydrogeological condition).

The carried research allows define elevations where settlements of larger or lesser size are concentrated more, and the population prefers to live in. The study work has practical importance for the country in terms of the prevention of undesirable migration from mountainous territories as well as the regulation of distribution of population.

2. RELEVANT CARRIED WORKS AND APPROACHES

In the Pre-Caspian parts of the research territory, including the northern part of Samur-Devechi plain (the Shollar plain), the relief as well as the lithological and hydrogeological conditions are favorable in terms of distribution of population and territorial organization of industrial facilities and farming. The shown territory is characterized with relatively high density of existing settlements and the wide spread of agricultural landscapes. Firstly, this is so because the Shollar plain has a dry, semi-arid and arid climate with mild winter,

and was created in the condition of long-term accumulation of fragmented materials (pebble, sand, clay, etc.) transported from mountainous areas by Samur, Gusarchay, Gudyalchay and other rivers, as well as the existence of pure underground and subsoil waters.

In this connection, settlements and economic facilities are densely situated in the Shollar plain where natural landscapes are intensively used or hardly transformed by the population. To the south-east, in the Samur-Devechi lowland, the existence of hard dry condition, the change of lithological foundation, and the high mineralization of subsoil waters are responsible for the worsening of landscape and ecological condition which entails sparse distribution of settlements and poor economic activity in that territory [2]. The number of settlements is less here. These settlements are located mainly along the river valleys (such as Valvalachay, Gilgilchay, Devechichay, Atachay) and channels, as well as the coastal areas of the Pre-Caspian territory. Covered anticlinal structures have been defined in Samur-Devechi with applying geophysical method (Abdullayev, Jafarov, 1962) and landscape-geomorphological method (Budagov, Mikayilov, 1969, 1979, 1985; Mikayilov, 1978). The determined structures favorably affected the location of urban and rural settlements. The anticlinal structures are responsible for the emerging of slowly impudent areas on the background of plain, altitude and configuration of which enabled the arising and developing of villages on them. These territories have affordable drainage properties, and typically experiences weak bogging as well. This creates favorable conditions for

the establishment of settlements during humid season of a year. This factor also facilitates the distribution of settlements and cities like Charkhi, Khachmaz, Khudat, Lajat, Tel, Shirvanovka and others [3,5,11]. These structures serve as a natural directive factor in the management of irrigation canals and ditches. In the Pre-Caspian coastal plains, the irrigation canals and ditches are lying from north-west to south-east. The condition of irrigation is efficient because of configuration of location of the anticlinal structures which naturally allow canal waters to be flowed into the depressive areas [9,10,11].

According to B.Budagov (1971), the relief is divided into the four basic altitude belts in the north-eastern slope of the Greater Caucasus. These are: 1. Low plain area (from –28 meter to 300 meter above the sea); 2. Foothill area (from 300 meter to 1000 meter); 3. Medium mountainous area (1000–2000 meter); 4. Highlands (2000–4480 meter).

As the data of the latest population census (2009) show, in Azerbaijan, there are 31 cities and settlements of urban type, and also 498 villages in the north-eastern part of the Greater Caucasus. These settlements are distributed unevenly depending on ecological and geomorphological condition.

3. ANALYSIS OF DATA

The territory area of plains, altitude of which is lower than the sea level, makes 630 sq. km. As is seen on the table 1, the areas, elevation of which is less than zero, include 41 settlements (7,5%) while the population number is 20913 persons (3,7%). The only settlement of urban type which is also situated in this altitude belt, has 2079 persons (1,2% of the population).

The second altitude belt encompasses 0-200 m or 65,6% of the total territory. Within this zone, the population number is 229,9 thousand persons. The urban population makes 113,9 persons (65,6%) while the number of rural population is 114,3 persons (36,6%).

The total area of the territories of 200-500 m of altitude makes 1121,03 sq. km which includes 102 settlements (19,3% of all settlements) as well. The total number of population living here is 87,2 thousand persons or 17,3% of the overall population of research territory. These belt includes one urban-type settlement which has 10,2 thousand dwellers (5,9% of the overall population). The number of villages is 96 (19,2%) where 77,0 thousand persons live.

In the north-eastern slopes of the Greater Caucasus, 500-1000 m of elevation encompasses 1267 sq. km (18,2%), where 117 urban and rural settlements (22,3%) are situated. These settlements include 4 urban-type ones (12,8%) with 44,6 thousand persons (25,7%), as well as 113 villages (22,7%) with 86,6 thousand persons (26,3%).

The territories of 1000-1500 m of elevation is 1018 sq.km, where 2 cities (6,5%), 63 villages (12,7%) and 65 (12,3%) are

located. The number of population is 27,2 thousand persons (5,4%).

The belt with 1500-2000 m of altitude makes up 583 sq.km, or 8,4% of the overall territory of north-eastern slopes of the Greater Caucasus. The population number is 6000 persons (1,2%) which are dwellers of 20 (3,8%) rural settlements.

As for the belt with above 2000 m of elevation, it includes areas with total territory area of 1098 sq.km. (15,7%). The population number makes up 2790 (0,6%) persons that are residents of 5 small villages.

As the comparison of data of population census shows, the population growth made 138748 persons, including 51703 urban residents and 86905 rural between 1989-2009 years. The growth was accompanied by the extension of populated territories and residential areas, as well as the rise of impact of landscape complexes on economic activity and the transformation of new natural complexes.

4. RESULTS

So, it is evident that the settlements and their population are unevenly distributed by altitude belts of relief. The carried study and analysis shows that the distribution of rural and urban-type settlements as well as their size, i.e. the population number depends on favorability of environmental and geographical conditions. In this connection, the population number gradually grows starting from the level of the Caspian Sea up to the territories higher than 1000 m. However, it is notable that the number of settlements between 0-200 m (179) as well as the population number (230 thousand persons) is higher compared to the background of overall gradual growth. The number of population sharply decreases behind 1000 m. Thus, the number of settlements is only 65, and their total population makes up 27,2 thousand persons while the corresponding indicators are 20 and 6,0 thousand persons between elevation of 1500-2000 m. In the areas higher than 2000 m, the number of population sharply decreases, making 2790 persons (only 5 settlements).

The density of settlements by lowland plains and mountainous areas is also different in the north-eastern part of the Greater Caucasus. Thus, from the Caspian coast (–27,5 m) to areas of 200 m of elevation, the density of population in average is 212 persons per sq.km. Between –26 m and 0 m, the corresponding indicator makes up 30 persons per 1 sq.km while between 0–200 m it equates 182 persons per 1 sq.km, and between 200-500 m the medium population density is 78 persons. It is remarkable that behind 500 m of elevation, the density sharply increases. Thus, in contrast to 200-500 m, the territories of 500-1000 m of elevation are populated much more. This is considered as abnormal on the overall background of distribution. Here the population density is 104 persons per 1 sq.km which is related to favorability of ecological and geographical condition. The remarked growth in this altitude belt is connected also with the existence of

Guba and Gusar cities which are affecting demographic development in nearby territories. Beginning from 1000 m, the higher areas are characterized with keen decrease of population density. The medium density of population is 24 persons per 1 sq.km between 1000-1500 m; 10 persons per 1 sq.km between 1500-2000 m; and 3 persons per 1 sq.km higher than 2000 m of elevation.

Within the territory of north-eastern part of the Great Caucasus, the Khizi region, located to south-east, considerably differs from other areas for its arid climate. This region is sharply different in terms of population density as well. Thus, at 0–200 m of elevation population density is 55 persons per sq.km, whereas this indicator makes up 21 persons for 200-500 m, 15 persons for 500-1000 m, and 9 persons for 1000-1500 m of elevation.

The analysis of location peculiarities by relief shows that the settlements (Rustov, Khinalig, Sohuh, Yerfi, Gonagkend, Khaltan and etc.) are situated mainly in depressive areas and terraced river valleys (Samur, Tahirchay, Gusarchay, Gudyalchay, Aghchay, Garachay, Valvalachay and etc.). This is so because inclination of the relief is much more at slopes higher than 600-1000 m of elevation, and on the other side, water provision is less. Meanwhile, at this elevation, the absence of favorable lands in terms of development of agriculture may create challenges for the dwellers. Therefore, the population prefers to be settled in terraced plains, valleys and nearby of river banks.

Peculiarities of distribution of settlements and population in the administrative regions are also different depending on ecological and geographical condition. According to

statistical data (2009), the population of Guba-Khachmaz economic region and also the Khizi administrative region, is concentrated in 498 rural settlements, of which 148 villages are situated in the Guba region, 137 villages are situated in Khachmaz, 88 villages are situated in Gusar, and 68 villages are situated in Devechi.

In the meantime, the settlements in the north-eastern part of the Greater Caucasus are considerably different for their size. The number of villages with population lesser than 200 persons is 127. 4,5% of the total population falls to the share of them. The number of rural settlements of 200-500 residents is 140; of 500-1000 residents is 116; 1000-2000 residents is 74; 2000-5000 persons is 30; and over 5000 persons is 4 (including the largest 1st Nugadi and 2nd Nugadi villages). This indicators show that settlements of 200-500 dwellers (140 villages) and also 500-1000 dwellers (116 villages) are the majority in the research territory. As usual, the number of larger villages is less whereas in the less-populated areas, this number is much more.

Analysis of peculiarities of location of the settlements and the relevant dependency on relief show that large settlements are located chiefly in favorable ecological and geomorphological condition, or intermountain depressions and terraced valleys, as well as benefiting water supply of higher level. As examples, the 1st and 2nd Nugadi villages, the administrative unit of Rustov, the urban settlement of Gonagkand and others

Table 1 The effect of differentiation of the altitude-spatial landscapes to population and settlement of the north-eastern slope of the Greater Caucasus (2009)

Landscape types	The area of attitude zones		The number of settlements		Population		The number of city settlements		The population of the cities		The number of the villages		The population of the villages		The total population of the villages, person	The population density person/ km ²		The number of villages in 100 km ²
	km ²	%	number	%	person	%	number	%	person	%	number	%	person	%		total	village	
-27,5-0	630.0	9.0	40	7.5	18.834	3.7	1	3.2	2.079	1.2	40	8.0	18.834	5.7	471	30	30	6
0-200	1264.5	18.1	179	33.8	229.884	45.7	18	58.1	113.870	65.6	161	32.4	114.304	34.6	712	182	90	13
200-500	1121.03	16.1	102	19.3	87.158	17.3	6	19.4	10.183	5.9	96	19.2	76.975	23.3	802	78	67	9
500-1000	1267.35	18.2	118	22.3	131.631	26.1	4	12.8	44.627	25.7	113	22.7	86.635	26.3	763	104	69	9
1000-1500	1117.55	14.5	65	12.3	247.161	5.4	2	6,5	2.817	1.6	63	12.7	24.344	7.5	386	24	22	6
1500-2000	583.4	8.4	20	3.8	6.014	1.2					20	4.0	6.014	1,8	301	10	10	3
More than 2000	1097.9	15.7	5	1.0	2.790	0.6					5	1.0	2.790	0,8	558	3	2	1
Total	6981.73	100	529	100	503.472	100	31	100	173.576	100	498	100	329.896	100	662	72	47	7

In the territory, both urban-type and rural settlements are distributed unevenly by altitude landscape belts. The existing cities (Guba, Gusar, Khachmaz, Davachi, Siyazan) and villages (the 1st and 2nd Nugadi settlements) are situated in accumulative plains or in those areas where plains penetrate into mountains. The cities of Gusar and Guba are situated in upper edges of accumulative cones of the rivers of Gusarchay and Gudyalchay or nearby of them. Quba city is located at 560 m of elevation (bank of Gudyalchay River) while Gusar city is located at 680 m (bank of Gusarchay River). Both cities are occupying 25-30 km long surfaces of accumulative terraces where valleys penetrate lower mountains to the south-west. Khachmaz city is located at 50 m of altitude in the terraced parts of emerged cones of Gudyalchay and Gusarchay, the center of the Shollar plain.

The carried studies make evident that economic activities of the population have different character at the altitude landscape belts. In Shollar Plain, the population is engaged mainly in such farming activities as gardening, melon and gourd growing, vegetable-growing and forage-growing. The Pre-Caspian plains, situated to the south-east of Valvalachay River, are used as pastures due to arid climate. Fishing is one of ancient activities in the Caspian coast. In the mountainous areas, gardening, as well as cultivation of cabbage and potato are the chief agricultural fields whereas livestock production and in part horticulture is developed in middle and upland areas. Favorable environmental and geographical condition in the mountains and plains allow develop bee-keeping in the future. Mountainous and plain territories of the territory have recreational importance (Yalama, Nabran) as well as are favorable in terms of ski tourism (the Shahdag near Aladash village). There are also big opportunities for creation and fostering of facilities of rest tourism in mountainous and lowland territories.

REFERENCES

[1] [1] Abdullayev, R.A., Jafarov H.J. (1962). Geological and geophysical characteristics of the Caspian oil region of Azerbaijan. Azerb.Gos.izdat. Baku.

[2] Statistical data of Azerbaijan. (2009). Bulletin of Azerbaijan State Statistical Committee.

[3] Budagov, B.A. Geomorphology of northern slope of the south-eastern Caucasus (1957). Transactions of Institute of Geography of Azerbaijan SSR. Vol. 7, Baku.

[4] Budagov, B.A., Mikayilov A.A. (1969). Landscape and geomorphological criteria of allocation of buried structures in the oil and gas zone of Guba (Azerbaijan SSR). *Structural and geomorphological studies in oil and gas exploration*. Leningrad. 57.

[5] Budagov, B.A., Mikayilov, A.A. (1979). Buried uplifts and their impact on formation of the landscape of Samur-Devechi lowland. *Proceedings of the Academy of Sciences of Azerbaijan SSR* (series of Earth Sciences), 6: 49-54.

[6] Budagov, B.A., Mikayilov, A.A. (1985). Development and formation of landscapes of South-Eastern Caucasus in connection with recent tectonics. Baku: Science. 176.

[7] Eminov, Z.N. (2005). Population of Azerbaijan. Baku. 558.

[8] Aliyev F.Sh. (2000). Underground waters, the use and its geoeological problems. Chashioglu. Baku. 326.

[9] Museyibov, M.A. (1998). Physical geography of Azerbaijan. Baku: Maarif. 399.

[10] Museyibov, M.A., Abbasova, N.A. (1999). Anthropogenic transformation of Azerbaijan. *Proceedings of Baku State University*, 3: 186-196.

[11] Museyibov, M.A., Ismayilov, Ch.N. (2002). Geoeological conditions of the Azerbaijani coast of the Caspian Sea. *Proceedings of Baku State University*. 3. 166-182