

ASSESSMENT OF SUSTAINABILITY OF DEMOGRAPHIC DEVELOPMENT OF MOUNTAIN AREAS (ON THE EXAMPLE OF THE UPLAND SHIRVAN ECONOMIC REGION)

R.N.Karimov

*Institute of Geography named after acad. H.A.Aliyev of ANAS,
AZ1148, Baku, Azerbaijan*

rovshan_karimov@yahoo.com

Abstract

The paper deals with the study of the sustainability of demographic development and processes going in mountain areas of Azerbaijan on the example of its Upland Shirvan region. This mountain region for long has been known as one of lagging economic regions of Azerbaijan, having the lowest urbanization rate and problem of out-migration. The demographic situation regarding many settlements of the region is not satisfactory at modern times as well. Upland Shirvan still faces continuous out-migration of the population. This process is observed both in cities and the countryside. Sustainability of demographic development is challenged while tens of settlements here have faced depopulation.

This study aims at assessing the sustainability of demographic development of the region of Upland Shirvan, based on the analysis of geographical features of resettlement, formation and distribution of settlements and village groups, population growth, migration and socioeconomic factors. The work defines tendencies going by the population growth and makes attempt to identify the risk of further depopulation of settlements in the region.

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1. Introduction

Development of settlements, including cities, urban-type settlements and villages is very crucial factor of socioeconomic development in mountain areas, since it affects the efficiency of territorial organization of economic areas. Big cities serve as standpoints in demographic development of mountain regions, attract labor resources and provides jobs to them. Improvement of network of infrastructure facilities has a positive impact on the demographic development of rural settlements, contributing to curbing of their population from migrating to plain regions, territories of which are geographically more advantageous for settlement and living. Tens of settlements locating in mountain areas of Azerbaijan, as the comparison of two latest published census materials show, have lost their population because of migration [17], driven by the lack of advanced infrastructure and communication, educational and medical facilities, as well as the high transport costs. Mountain areas lose in competition to plain areas since they may become less attractive for younger generation in condition of high urbanization and cultural globalization. Mountain areas of Azerbaijan are in need of regulation in terms of demographic development, since the population is distributed too unevenly, while

the major part of the population lives in lowland areas below than 500 m of altitude [5].

Actually, necessity of regulating the demographic development of the regions and settlements has been an urgent matter in Azerbaijan throughout the decades, long before the concept of sustainability itself arose. Nowadays this problem continues to be an urgent issue. This is linked to such factors as increasing population density in condition of country's smaller territory size, highly uneven distribution of the country's population over its territory, low growth rate in demographic development of medium cities, depopulation of some mountain villages, etc. [11]. Some regions in Azerbaijan are lagging in terms of demographical development and industrialization, whereas the latter is vitally necessary for the sustainable development of regions located far from the capital Baku city [9]. There is a decline observed by the population of some rural areas, in particular of those located at 500-1000 m of altitude [3]. Similar tendency driven by socioeconomic factors can be observed in many regions of the country. The migration of the population from the regions to the cities of Baku hinders the demographic development of those regions, including of cities and villages, resulting in falling of population growth rate in rural settlements [13]. Tens of villages experience depopulation or may

face depopulation through certain period of time in various mountain areas [12].

The **aim** of this paper is to assess the sustainability of recent demographic development of a region and its settlement system upon studying and analyzing the demographic processes and tendencies, as well as the current demographic situation and the responsible factors affecting these processes on the example of the Upland Shirvan region of Azerbaijan. Studying the issue of sustainable demographic development by this region of Upland Shirvan is quite topical, since demographically it is one of most lagging regions in the country.

Economic difficulties seen at the national level and in particular gaps observed in the real sector of the economy in the 90s and early 2000s [1] have negatively affected the development of rural settlements in the regions of the country and weakened the socioeconomic base of its settlements. The mentioned was typical for the Upland Shirvan region as well. The weakened industrial and agricultural capacity has curbed the demographic development of settlements in this region. Starting from the first half of 2000s, revenues gained from oil sector and the implementation of state programs on socioeconomic development allowed implement the regional policy, revive the economy, prevent mass emigration of population from the country, and opened an opportunities for demographic redevelopment in the regions of Azerbaijan. In our studies we focused mainly on the last 20 years of demographic development, i.e. the post-crisis period.

2. Literature review

Demographic situation and processes, observed and going in the Upland Shirvan have been the subject of discussions and analyses in the works of scholars of soviet and post-soviet period, including of N.Allahverdiyev, E.Mehraliyev, Sh.Goychayli, V.Efendiyev, Sh.Damirgayayev, N.Ayyubov, Z.Eminov and other researchers. In terms of territory, Upland Shirvan can be referred as a region with highest potential in Azerbaijan [2, p. 196]. The region has 6.13 thousand sq. km, and it occupies 7.1% of the country's total territory. It occupies the southern and southeastern parts of Greater Caucasus in the north, and partly covers the Kur-Aras lowland in the south. Demographic development of the region of Upland Shirvan used to lag behind since the Soviet era, and the out-migration were having a negative impact on its population growth [15, p. 75]. The Upland Shirvan has been lagging both economically and demographically from other regions of Azerbaijan driven by the local sociodemographic conditions and especially

due to underestimation of natural increase and migration of population and also specific features of rural and urban distribution when planning the social and economic development of the region. Weak socioeconomic base and the related human migration were the main hindering factors in the demographic development of the Upland Shirvan for the decades. Smaller villages in the higher parts of this region were declared ineffective, and eventually they were combined in line with the state policy of resettling lowland areas [14, p. 129]. Consequently, many mountain villages have been disappeared in the Upland Shirvan like in other regions of Azerbaijan. Transformation of the system of rural settlement compliant to the requirements of the new conditions was necessary [10]. However, the hard social and economic challenges following the breakdown of the USSR challenged the demographic development of the Upland Shirvan more. The Upland Shirvan had been characterized also by a low level of urbanization, since the formation of cities had been challenged against the background of migration to the Absheron region [8]. Economic problems forced the population of Upland Shirvan to migrate to Baku city and its suburb settlements more intensively during the first years of Azerbaijan's independence. The formation of not only villages but also urban-type settlements and cities were lagging in Upland Shirvan because of the same reason. This situation is still being observed, and therefore, the number and population number of settlements are lower in the region [9].

3. Methodology

To assess the demographic situation and favorability of demographic processes going in the Upland Shirvan, we reviewed the related scientific literature materials, and also analyzed and compared relevant statistical data by each 4 districts, including for the period of 2000-2018 years. We also conducted comparison of results of the two population census (of 1999 and 2009 years) led in Azerbaijan to define depopulation trends going by the settlements of the Upland Shirvan. We considered the influencing role of cities-regional centers in demographic context, the formation and geographical spread of the rural agglomerations (village groups) available in the Upland Shirvan, as well as the peculiarity of distribution of the population by the region's territory with considering the local geographical conditions and factors.

To conduct better analysis of factors impacting the demographic development and capacity of districts and settlements, we visited the territories of four districts of Upland Shirvan as well. All the car-

ried out above enabled us estimate potential of demographic development of urban and rural settlements, define tendencies with regard to change in population number of them and also demographic growth in the region. Consequently, the statistical study and observations enabled us to have a good vision towards the features of spatial spread of settlements, learn and identify the responsible and influencing factors, and assess the demographic sustainability of the Upland Shirvan region, which are concretely reflected in the following chapters.

4. Materials and analysis

In the Upland Shirvan region, natural conditions are different, and natural resources, suitable (fertile land resources, fresh water resources, etc.) for economic activities are distributed unevenly in its territory. Fragmentation of the relief as well as the presence of inclined hills and descents and ascents may challenge the settlement process in some parts of the region. From west to east in the region the altitude of relief increases. Correspondingly, the foothills and low mountain areas of Shamakhi and Ismayilli districts are more populous, and the number of rural settlements in such areas is higher than others. Arid climatic conditions, scarce water resources, lack of irrigation canals, limited access to irrigation conditions, and low soil fertility are the adverse factors affecting the distribution of population in Gobustan and in part in Shamakhy districts.

The Upland Shirvan is the most landslide-prone region of Azerbaijan. Here certain settlements are regularly affected and devastated by heavy landslides. This factor may challenge sustainable development of many settlements in the region. There are 69 settlements with totally about 44 thousand residents, which live under certain risk of landslide in the region. There are 40 settlements (19.4 thousand people) in Ismayilli, 15 settlements (15.5 thousand people) in Shamakhy, 11 settlements (3.8 thousand people) in Aghsu, and 3 settlements in Gobustan (4.8 thousand people) located in areas with a high risk of landslides [18]. Here it must be emphasized that the Muganli village of Shamakhy district was heavily devastated by the landslide in 2010, and the village was completely relocated, while its residents became dwellers of a new settlement built for them in another area. In May of 2002, another landslide occurred in the village of Jabani, resulting in very big damages. A lot of other cases of landslide-related devastations can be shown as well.

In the Upland Shirvan, beside with relatively flat plains and foothill areas, widely spread in the

economic region, the medium and high mountain areas and high valleys altitude of which may reach up 1200-1300 m (Lahij, Mudri, Chukhuryurd etc.) are useful for settlement and agriculture [16]. However, the areas alongside the rivers of Aghsu, Pirsaat and Gozluchay, as well as the transport and infrastructure facilities have been devastated over and over by heavy landslides and long-term influence of active erosional processes [6], creating difficulties to resettlement process in the area and hindering the enlargement of rural and urban settlements.

There are significant differences in population number and density throughout the territory of the Upland Shirvan. The villages in the Upland Shirvan region are of different sizes, thus, depending on relief, they are grouped in smaller areas constituting group of rural settlements, whereas in other places are evidently scattered and located far from each other (especially in Gobustan district).

Population number of the Upland Shirvan region is 317.0 thousand, making 3.2% of Azerbaijan's population. There are 272 villages in this region. 67.6% of all villages are in the territory of Shamakhy (38.6%) and Aghsu (29.0%) districts. Shamakhy with 105.1 thousand residents is the largest district, combining 33% of the region's total population, while Ismayilli is the second and Aghsu is the third (Table 1). The latter has the highest population density. The average size of rural settlements is very different by four districts. It is about 970 persons in Shamakhy, 730 persons in Aghsu, 555 persons in Ismayilli, and 1190 persons in Gobustan district, while the average indicator by the region is about 770 persons. According to official statistics, 65.8% of the population of Upland Shirvan is composed of villagers, and only 34.2% are urban residents [19].

In Shamakhy district, there are 1 city, 5 urban-type settlements (Sabir, Yusif Mammadaliyev, Madrasa, Shahriyar and Ashkar) and 57 villages. There is a considerable difference in the distribution of villages in Shamakhy. Some of them are in the areas close to Shamakhy city. The southern parts of the district, the areas adjacent to the Hajigabul city, as well as the areas over 1500 m, are poorly populated and characterized by low population density. However, Shamakhy city, a center of this district is the biggest demographic cluster in the Upland Shirvan, accounting for 41% of the total population of all cities of this region. In the last 10 years (2009-2019), the city's population has been increased at 1.26% growth rate per year in average, having 40.1 thousand inhabitants in 2019 [17; 19, p. 80). The largest rural settlements in the district are Goylar (7.2 thousand people), Gushchu (4.2 thousand), Charhan (3.9 thousand people), etc.

Table 1

The main demographic data of the Upland Shirvan region

Territory of district or an economic region	Territory area, Thousand sq.km	Number of cities	Number of urban settlements	Number of villages	Popul. number, thous. person (01.01.2019)	Popul. density, thousand person/sq.km	Urban population (thousand person)	Rural population (thousand person)
Shamakhy d.	1.67	1	5	57	105.1	63	49.1	55.4
Ismayilli d.	2.07	1	2	105	86.7	42	28.0	58.4
Aghsu d.	1.02	1	0	79	80.1	79	21.9	57.8
Gobustan d.	1.37	1	1	31	46.7	34	9.5	36.9
Upland Shirvan r.	6.13	4	8	272	317.0	52	108.5	208.5

The territory of Aghsu district, unlike of Shamakhy, Ismayilli and Gobustan districts, is composed mainly of low plains. Its northern part is occupied by dry pastures and in part by mountain slopes. The temperate-hot dry subtropical climate prevails. The relief and climatic conditions of Aghsu are very favorable for resettlement. The river valleys and riverbeds of Girdimanchay, Aghsuchay and their tributaries, as well as Aghdarchay and Nazirchay rivers have been widely used in farming throughout history. Lands are very suitable for planting. Shirvan Plain, which covers the southern part of Aghsu district, is a territory of intensive irrigation. Villages have long been specialized in cattle and sheep breeding, grain growing, cotton growing, fruit and vegetable growing. Rural population also cultivates orchards, sunflower, pomegranate, grape etc. Livestock development has been extended in recent years.

Since irrigational and intensively-developed agricultural sector is prevalent in Aghsu, the district has a relatively high density of villages despite its relatively smaller area. Most of them are new and arose in the second half of the 20th century. To the north of the Garamaryam Ridge, there are a lot of villages that specialize in different kinds of crop production due to benefiting from irrigation opportunities. Beside with this, there are numerous small and medium villages in the north of the district's center, along the Aghsu River. Rural settlements are also developed in the south, towards the Hajigabul district. In general, 16 villages are in the mountain zone.

Aghsu district is distinguished from by the presence of numerous small villages. Meanwhile, there are 6 villages in Aghsu with a population at 3000-5500 persons. There are relatively large villages such as in Gagali, Bijo, Kandoba, Kalva, Arabushagi, Padar, Arabmehdibay etc. There are 9 small village groups (areals) in Aghsu: Bozavand-

Agharkh, Gagali-Arabushagi-Chaparli, Bijo-Lan-gabiz, Garagoyunlu-Novju-Arabsarvan, Padar-Pirhasanli, Kandoba-Abbaskhanly, Gurjuvan, Nuyudlu-Girlar and Kalva. Most of them combine only smaller villages.

The city of Aghsu, a center of the district has 22.0 inhabitants [19]. The city demographically has less attracting power, since its industrial capacity yet is not high. However, it has a high potential for demographic development.

In Ismayilli district, the relief and biodiversity conditions are complex and various by areas. Considerable part of the territory of Ismayilli district is not only landslide-prone but is also vulnerable towards rockfall and talus processes. The areas of settlements of Lahij, Mudri, Varna, Himran, Ehen, Zergeran, Tirjan etc. are regularly subjected to the impact of such destructive natural processes. In particular during colder season, these processes harm the highways, bridges and other facilities, and this challenges the accessibility of the mentioned settlements [4].

Due to the prevalence of fertile dark brown, chestnut-colored and black soils, the availability of land resources allows develop different kinds of planting, including organic vegetation. Ismayilli district specializes on grain-growing, leguminous cultivation, technical crop production, fruit growing, and livestock which are of high importance in terms of sustainable demographic development of rural areas. Recreational potential of villages of Ismayilli is higher as well.

Due to its relatively large area, and on the other hand, because of various relief features, and climatic conditions, the villages in Ismayilli are geographically scattered. Concentration of these villages in the territory of Ismayilli district can be grouped as follows: villages located to the right of Shamakhi-Aghsu-Ismayilli highway, either in the vicinity or relatively far to this main transport road of

transitional importance (1); highland villages located higher than the Lahij area, those scattered towards the Burovdal village (2); high mountain villages on the right bank of the upper flow of Gir-dimanchay River (3); mountain villages occupying the northwest from Ismayilli city (4); villages located on the plateau of Gash, the western part of the district (5); villages spread to the southwest and south from Ismayilli city (6); villages located to the east from the Ismayilli-Kurdmashi highway (7); and villages located to the southeast of Ismayilli city, the foothills of the Langabiz mountain ridge and adjacent areas (8).

Upper parts of the district with more than 2000 m of altitude have cold climate and are relatively unsuitable for settlement of population.

The city of Ismayilli, a center of the Ismayilli district has 25.7 inhabitants [19]. However, the city is in need of highly improved infrastructure to have a more positive impact on the rural settlements.

Gobustan district is located in the eastern part of the Upland Shirvan, and it is characterized by high territorial capacity and lower number of population, though, however, population growth in the district is relatively high. The Gobustan city is one of the smallest administrative centers in Azerbaijan, and it has only 9.1 thousand residents even after its merger with the former urban-type settlement of Narimankend in 2008. There are not big rural settlements around the Gobustan city, and settlements are scarce here. The latter factor makes the growth of Gobustan city challengeable.

The demographic capacity of rural development in Gobustan district is low as well, and feasibility for agricultural and also industrial developments are limited, since surface water resources are scarce during most of year. The mentioned factors challenge the socioeconomic situation and have curbing effect on the growth of villages. The main economic activities in the rural population are sheep breeding, cattle breeding, planting and in

part bee-keeping, and they serve as a basis for development of settlements.

5. Results.

Analysis of the dynamics of population number of Upland Shirvan by the last 30 years shows that the average growth per year was 3.7 thousand persons only, and growth for the period 1990-2019 made 50% (Table 2). This figure cannot be considered favorable in terms of sustainable demographic development, if taking into account the lesser size of population of this region. For instance, the corresponding figure equals 53% in Lankaran-As-tara region, where population number is 4.4 times larger than in Upland Shirvan, or 47% in Guba-Khachmaz which is more populous than Upland Shirvan by more than 1.7 times [7, p. 75, 76; 19, p. 68].

Absolute growth rate of Upland Shirvan is relatively low (person per 1000 persons in average), despite that this region is distinguished by lowest urbanization rate (34%) among regions. Between the last two censuses (1999-2009) carried in the country the rural population of the region has grown as much as 12.2 thousand only (by 6.7% during ten years, or as 1220 as much persons per year). This growth rate, recorded during the whole decade in a region with high portion of rural population must be considered as 'low' against the background of the country's demographic development during the same period. In 1990-1995, when the population number of the Upland Shirvan was about 40-50 thousand lesser than that of the present, the number of rural population has been increased by 18800 persons annually, or as 3760 persons as much in average per year. As this comparison proves, there are serious problems in growth of population. Due to the low population growth rate, the share of the region's rural population within the country's rural population has declined over the last 30 years, making 4.8% in 1989 and 4.5% in 2019 [17].

Table 2

Population number in Upland Shirvan economic region (thousand person)

Territory of district/economic region	1990	1995	2000	2005	2010	2015	2019	Growth in 1990-2019
Shamakhy d.	30.8	32.8	34.6	37.4	40.5	44.0	46.7	52%
Ismayilli d.	61.7	70.6	73.0	76.4	80.0	84.0	86.7	41%
Aghsu d.	54.6	60.2	63.1	67.0	71.0	76.3	80.1	47%
Gobustan d.	65.5	76.4	81.4	86.0	92.5	99.7	105.1	60%
Upland Shirvan r.	212.6	240.0	252.1	266.8	284.0	304.0	318.6	50%

This table is compiled based on the data multiyear (from 1990 to 2019) data of State Statistical Committee of the Azerbaijan Republic.

Upland Shirvan has long been characterized to be a region with higher birth and natural increase rates in Azerbaijan. This was mainly due to the low urbanization rate. However, comparative analysis shows that there are no significant differences between the birth and natural increase rates of 2000 and 2018 years. More exactly, positive trend is not being observed: the region's natural growth rate is lesser than natural growth rate of the early 2000s. Current birth rates recorded in four districts of Upland Shirvan are lower than that were recorded in 2000. As the analysis of the data by the last 7-8 years shows, there is a trend of decline by these demographic processes (Figures 1, 2 and 3). Considerable fall in natural growth rate is more evident by 2014-2018. Another feature we defined is that there are no considerable differences between natural increase rates by rural and urban populations in the region. This is driven by the impact of ongoing cultural globalization and sociocultural changes.

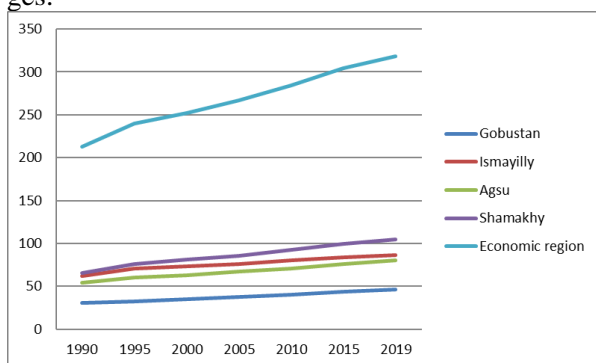


Figure 1. Population growth in Upland Shirvan region

In general, the analysis shows that Ismayilli district is distinguished for much lesser natural increase rate among its population, whereas the same data is higher in Gobustan district. Since birth rate is lower, and therefore the natural increase rate lags behind the intensity of migration to Baku city, most of mountain villages, particularly in Ismayilli district are smaller or of medium size.

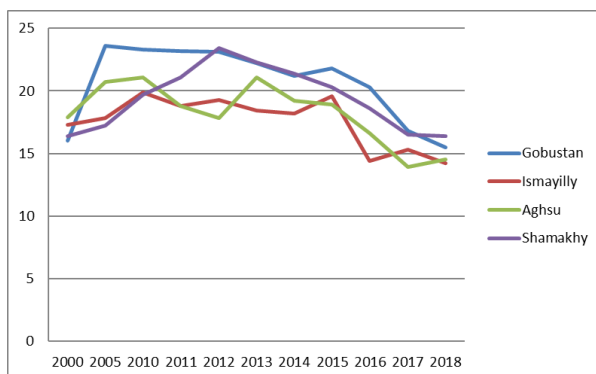


Figure 2. Birth rate per 1000 persons in Upland Shirvan region

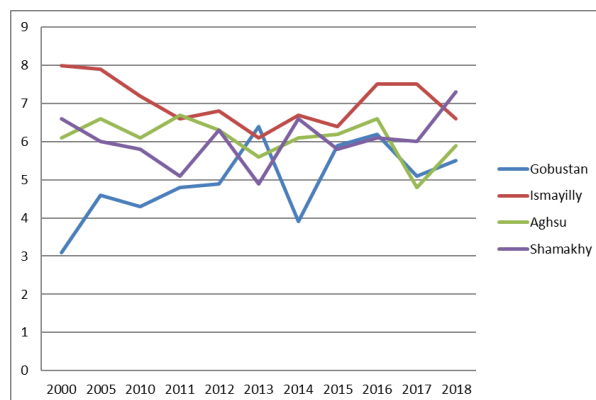


Figure 3. Mortality rate per 1000 persons in Upland Shirvan region

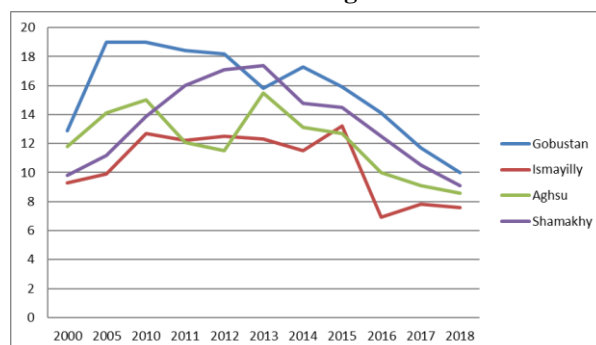


Figure 4. Natural increase rate per 1000 persons in Upland Shirvan region

An analysis of the dynamics of *mortality rate* for both the last decades and recent years shows that it is lower than that of 90es. This positive tendency, conditioned by the better application of achievements of global medical science, is associated with relevant country-scale tendency: the life expectancy tends to grow since the early 90s in Azerbaijan, and the Upland Shirvan is not aside of this process. Meanwhile, as an analysis shows, the mortality rate is traditionally higher in Ismayilli than in the rest three districts of the studied region. This is related to the relatively low and difficult accessibility of medical services in Ismayilli: it is relatively difficult to access health facilities in this district, particularly during colder months. Due the same reason, the risk of death among children is higher as well. The city of Ismayilli does not provide the necessary social services to its subordinated villages. The second reason of higher mortality rate fixed in Ismayilli is related to the age composition of the population (particularly of the settlements located in upland areas), which is influenced by the migration of the population at young ages.

The carried studies also showed that rural settlements located in upland areas or valleys, surrounded by high mountain ridges, where the main

challenges are observed in services and sociocultural sphere, either already face depopulation, or will face it in the upcoming years and decades. Most of the mentioned group of rural settlements typically is lagging in relation to foothill rural settlements for demographic development, even though the villages specializing in grain-growing, viticulture and fruit-growing in the foothills and mountainous areas grow with higher rates. As our studies shows, the process of *formation of rural agglomerations* is being weakened in the region. This concerns particularly Ismayilli and Shamakhy districts, while in Gobustan district the villages are scattered at high extent and unfavorable to form rural agglomerations at all. Factors such as remote location or difficult accessibility in relation to cities, poor infrastructure and especially the prevalence of underdeveloped labor-consuming economic sectors hinder the demographic development of many rural settlements.

It must be noted with particular emphasis that the geographical proximity of The Upland Shirvan to Absheron region, more specifically migration of population from Upland Shirvan affects the resettlement of rural population in the region at crucial level. Thus, as our observations show, since the late 1990s and early 2000s dwellers of many villages of the Upland Shirvan migrate to Baku or to its suburban settlements, forming new settlements, in most cases with poor infrastructure. Those former residents of Upland Shirvan have formed a number of urban-type settlements in the western part of the Absheron peninsula, including Lokbatan, Guzdak, 28 May, Mushfig, Gobu etc. Population of Khirdalan city as well as of settlements of Garadagh district of Baku are significantly composed of former residents of Shamakhi, Ismayilli, Aghsu and Gobustan districts, too.

One of the most urgent problems in demographic development of the Upland Shirvan is a depopulation of settlements. We studied this process based on the analysis of the last census (1999 and 2009 years) materials conducted in the country.

In Shamakhy district, 1 urban type settlement (Sabir) and at least 11 villages (Talishnuru, Birinji Chayli, Ikinji Chabani, Avakhil, Adnali, Hajigadirli, Yenikand, Karkanj, Gurdtepe, Nagharakhana, Pirbayli) has faced depopulation. This negative process has been observed even in some relatively larger villages (e.g. Birinji Chayli with 1603 residents). Higher decrease in the number of population number has been recorded by the Ikinji Chabani village at 181 persons. The corresponding figure equals 48 persons in Birinji Chayli, 55 persons in Avakhil, and 52 persons in Talishnuru. The

village of Ajidere, which had less than 10 residents in the late 90s, almost disappeared some ten years ago. Beside with the above mentioned 11 villages which already experienced depopulation, growth rate is lower in Sabir settlement, as well as in the villages of Hajili, Dedegunesh, Birinji Chaghan, Sefali, Jabani, Chiragli, Shirvan, Sabirli, Melhem, Angakharan, Kechmedin, Galaderesi, Sis, Chol Goyler etc. Analysis of the census data allows state about the depopulation threat in a series of villages of Shamakhy district, including Mammadbayli, Sefali, Galaderesi, Dedegunesh, Birinji Chaghan and a few others.

In Aghsu, there are tens of smaller villages with around 100-200 residents. However, as comparative analysis of the data shows, in only 4 villages out of 79 ones, evident fall in number of population has been formally recorded. The most considerable depopulation has happened by the village of Shahbeyli, where reduction of residents at 102 persons has been recorded. The corresponding figure has made 34 persons in Nuran, 22 persons in Muradli, and 15 persons in Rahimaghali village. The same process but with much lesser decline (as less as 1–8 persons) has been recorded by population of Mashadganly, Kalaghayly, Gashad, Gyrlar and Zargava villages. In at least 8 villages more the risk of depopulation at different degrees still remains, though, however, only 1 of them (Khashydere with less than 15 residents) faces the real risk of disappearing, whereas the 3 more villages (Kandakhan, Yenikend and Hingar with less than 40 residents) could to avoid depopulation, and has lesser risk of disappearing.

Among the four districts of the Upland Shirvan region, the most serious problem of depopulation is *in Ismayilli*. 27 settlements out of 105 ones can be formally recorded as ‘depopulated’, including the urban-type settlement of Lahij, and the villages of Ivanovka, Gubakhalilli, Girk, Nanij, Guyum, Namazgah, Keyvandi, Mulukh, Qoydan, Zarat, Ustalgishlag, Shabiyani, Bahliyan, Kelbend, Shukurchu, Yenikend, Garagaya, Goshakend, Tubukend, Gezli, Mudri, Gersele, Zergeran, Machakhy, Keshkhurt, and Pireganim. This means almost every fourth village in Ismayilli district actually has experienced or continues to experience depopulation. Among this group of settlements, the Lahij with about 850 residents can be emphasized in particular, since it is one of old villages in the region, and has unique cultural value, being a well-known center of cultural tourism in Azerbaijan as well. The population number of Lahij almost has not been changed since the middle of 90s, although it is one of two villages (together with Basgal) in Ismayilli

that has been granted a status of urban-type settlement.

The village of Ivanovka, which is one of largest villages in Ismayilli, is composed of ethnic malakans, and its population has been reduced as less as 430 persons between the last two census, the highest reduction in the district, mainly due to higher share of the aged and adults in the structure of population, and relatedly, the lower natality and birth rates as well as higher mortality.

In Ismayilli, there are also a big portion of small villages, population of which grows so slowly that these rural settlements can be included in the list of ‘villages having high risk of disappearance’. This concerns first of all those with residents with lesser than 100 residents, such as Piraganim (2 residents only), Garcha (3 r.), Dahar (5 r.), Keshkhurt (11 r.), Tubukend (22 r.), Kena (27 residents), Khimran (26 r.), Mulukh (30 r.), Zarat (31 r.), Gersele (33 p.), Dvoryan (33 r.), Mushkamir (36), Yenikend (59 r.), Haftasov (73 r.), Nanij (73 r.), Bahliyan (76 r.), Bilirtan (79), Shukurchu (80 r.), Mudri (88 r.), and others. As seen, a few of them even can be considered as almost disappeared.

Our visits to Ismayilli district in 2019 and previous years proved the presence of depopulation problem here. The actual population number of many villages in Ismayilli is lower than the figures shown in official statistics. Thus, large part of population of many rural settlements, typically the segment of younger and medium generation, now works in Baku. Many of them live in the Baku urban area with their families and do not intend to return back in the future as well. We also found that many families in mountain areas experience the lack of sustainable gas supply, including during the colder season, and this is one of main pushing factors responsible for migration from the villages of Ismayilli to Baku.

In Gobustan district, population number of 9 villages has been decreased, including of Nardaran (as less as 63 persons), Gurbanchi (38 p.), Mudrise (36 p.), Julyan (30 p.), Sulut (17 p.), Kalfaraj (13 p.), Guchatan (9 p.), Sersure (6 p.) and Jeyrankechmaz (5 p.). Several rural settlements such as Dagh Kolani, Shikhlar and Damlamaja have disappeared long before, though their names are still shown in the official census materials. The mentioned shows that more than a third part of all villages in Gobustan are currently have a risk of depopulation. Some even is under the risk of disappearance (Jeyranbatan etc.). Though Gobustan performs higher birth rate than others in the Upland

Shirvan region, the negative demographic consequences of out-migration were unavoidable here in recent years.

6. Conclusion.

The studies we carried out on the demographic development of the Upland Shirvan region shows that the demographic situation in this region is not advantageous in terms of sustainability, since the current rates of birth and natural increase of population are not enough to provide higher growth rate of population while there is a high migration flow from this region to the Baku urban area. High migration from the region is evidently reflected in the demographic development of both central cities of administrative district (with the exception of Shamakhy city) and rural settlements. Rural settlements are more relatedly affected as this study shows.

Though rural settlements have formed 6 rural agglomerations in Shamakhy, 9 villages in Aghsu and 8 villages in Ismayilli, most of these rural settlements are smaller in size, and unfortunately, are close to experience depopulation and in some cases even disappearance in the near future against the background of low population growth of them and the ongoing adverse migration processes. The higher number of villages with a risk of disappearance is mostly typical for Ismayilli, as well as at lesser extent for Shamakhy and Gobustan districts.

Upon analyzing the situation with settlements of the Upland Shirvan region, we found out that totally around 55 settlements in this region have already experienced depopulation process. About 8-10 villages have been disappeared or almost disappeared (if not taking into account from 1 up to 10 residents that they currently have) during the last 20 years. As our analysis shows, around 30 villages in the region are under the high risk of disappearance, while, several tens of others also are associated with availability of such risk at lesser degrees.

7. Recommendations.

In the future, sustainability of demographic development will be influenced by the effectiveness of creation of jobs in the Upland Shirvan, and providing of better employment. This in its turn will depend on the character and implementation of territorial organization of industrial, agricultural and service subsectors, and the strengthening of socioeconomic potential of the region's cities and rural settlements. This must prevent the mass migration from the Upland Shirvan at least partially. In context of the above mentioned, services must be more accessible for the population in geographical terms, especially with respect to the relatively remote rural settlements. Farmers must benefit from

facilitated conditions in agrarian sector. Sustainable demographic development of the region must be contributed considerably by the cities: the stronger the job-intensive industrial of the cities of Shamakhy, Ismayilli, Aghsu and Gobustan will be, the lesser number of villagers will prefer to move from the Upland Shirvan to the city of Baku.

As we think, manufacturing and intensive planting must serve as the two main key sectors in the strengthening of economic potential of the region. Creation of labor-intensive economic areas must curb the negative migration from the region. Beside with this, the infrastructure and well-being of the local population can be supported through the fostering of tourism and its ecotourism subsector, which, as the practice of advanced countries show, could play more income generating factor with respect to local communities and be more facilitating factor in the development of their villages. In this regard, villages of such districts as Shamakhi and Ismayilli may benefit from their natural tourism potential, including attractive natural landscapes, mineral springs, and mountain forests widespread. E.g., sites of Archiman, Sis, Galebugurd, Safali, Dadagunash and Gizmeydan and many other villages are favorable in terms of developing ecotourism. Lahij, Basgal, Mudri, and tens of other old mountain settlements can be involved to recreational tourism. It is very important that the development of tourism must provide employment for the local communities. The construction of a new modern highway to Lahij area from the Damirchilar village of Shamakhy district is expected to have a positive impact on the development of rural settlements as well.

While the Upland Shirvan has a big territorial and resource capacity, using of its natural, human and economic potential in efficient and sustainably-managed way will ensure its sustainable demographic development in the future.

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**ОЦЕНКА УСТОЙЧИВОСТИ
ДЕМОГРАФИЧЕСКОГО РАЗВИТИЯ ГОРНЫХ
ТЕРРИТОРИЙ (НА ПРИМЕРЕ ГОРНО-
ШИРВАНСКОГО ЭКОНОМИЧЕСКОГО
РЕГИОНА)**

Р.Н.Керимов

Аннотация. Статья посвящена изучению устойчивости демографического развития и процессов, характерных для горных районов Азербайджана на примере Горно-Ширванского экономического района. Этот экономический район долгое время характеризовался как один из самых отстающих в стране, имея самый низкий уровень урбанизации, где отток населения из региона являлся серьезной проблемой. Устойчивость демографического развития региона, демографическая ситуация в отношении многих населенных пунктов региона продолжает оставаться неудовлетворительной. Городские и сельские населенные пункты Горного Ширвана по-прежнему испытывают продолжающуюся миграцию населения. В десятках населенных пунктах наблюдается депопуляция.

Данное исследование нацелено на оценку устойчивости демографического развития Горного Ширвана на основе анализа географических особенностей расселения, формирования и распределения населенных пунктов и сельских групп, прироста населения, миграции и социально-экономических факторов. В ходе работы установлены тенденции прироста населения, делается попытка выявить риск дальнейшей депопуляции населенных пунктов в регионе.

Ключевые слова: Ширван, горный, сельская агломерация, устойчивое, населенный пункт, демографический, миграция

**DAĞLIQ ƏRAZİLƏRDƏ DEMOQRAFİK
İNKİŞAFIN DAVAMLILIĞININ
QIYMƏTLƏNDİRİLMƏSİ (DAĞLIQ ŞİRVAN
İQTİSADİ RAYONUNUN TİMSALINDA)**

R.N.Kerimov

Xülasə. Məqalədə Azərbaycanın dağlıq ərazilərindəki demoqrafik inkişafın və proseslərin dayanıqlığı Dağlıq Şirvan iqtisadi rayonunun təmsalında tədqiq olunur və qiymətləndirilir. Bu dağlıq region uzun müddət Azərbaycanın geridə qalmış iqtisadi rayonlarından biri kimi tanınmış, ən aşağı urbanizasiya səviyyəsi və kənara miqrasiya axınları ilə səciyyələnmişdir. Hazırda da regionun bir çox yaşayış məntəqələri ilə bağlı demoqrafik situasiya qənaətbəxş deyildir. Dağlıq Şirvan ərazisində hələ də əhalinin kənara miqrasiyası müşahidə edilir. Bu proses həm şəhər tipli, həm də kənd yaşayış məntəqələri üçün səciyyəvidir. Regionun onlarla yaşayış məntəqəsində əhalinin sayının azalması müşahidə edilmişdir.

Bu tədqiqat işinin məqsədi məskunlaşma xüsusiyyətlərinin, yaşayış məntəqələrinin və kənd qruplarının formalaşmasının, onların ərazi üzrə yayılmasının, həmçinin əhalinin artımı, miqrasiyası və digər sosial-iqtisadi amillərin təhlili əsasında Dağlıq Şirvan regionunda demoqrafik inkişafın davamlılığını qiymətləndirməkdir. Məqalədə əhalinin artımında gedən tendensiyalar, yaşayış məntəqələrinin gələcəkdə sayının azalması riski müəyyən edilir.

Açar sözlər: Şirvan, dağlıq, kənd aqlomerasiyası, davamlı, yaşayış məntəqəsi, demoqrafik, miqrasiya