

ECONOMIC AND GEOGRAPHIC FACTORS AFFECTING THE DEVELOPMENT OF GREATER BAKU

Vusat AFANDIYEV¹, Zakir EMINOV², Saleh NAGIYEV¹

¹Baku State University, Azerbaijan

²Institute of Geography, National Academy of Sciences of Azerbaijan

Abstract: Globally, the responsible factors for the ongoing development of urbanization are the high speed of population growth, and the mass migration of humans to cities and large urban areas. In most countries, this process resulted in the emergence of 'pseudo-urbanization' which is difficult to be regulated. The purpose of the carried researches to determine the development priorities in the territory of Greater Baku – the capital city of the Republic of Azerbaijan; to define the problems that take place in this connection; and to develop ways of elimination of these problems. The reason of taking Baku as a research area is connected with some of the factors. Firstly, studies on Baku have been conducted based on the Soviet geographical and urban planning school and their methods for a long period. In this regard, it is necessary to carry out research in this field based on the principles adopted in most countries. Secondly, since 1992, the intensive accumulation of population in the territory of the capital city and the surrounding areas is being observed because of socio-economic problems. As a result, the process of pseudo-urbanization intensified, entailing a densely-populated area. Thirdly, low-rise buildings still continue to exist in the large areas within the territory of Baku, and they are not associated with the functional structure of the city. This situation creates many challenges, particularly in terms of density growth and effective use of the city's territory. Finally, numerous new buildings have been constructed in the residential areas of Baku in recent years, and this may entail serious problems in water supply, energy provision, and utilities. The study is carried out referring to previous works of researchers, statistic data, and the results of the population census conducted in 1959-2009. The practical significance of the scientific work is that positive and negative factors affecting the further development of Greater Baku are defined together with showing the optimal ways of development.

Key Words: *city, settlement, district, urbanization, agglomeration of Baku, Greater Baku.*

Introduction

Development and growth of the population number of cities intensify the speed of urbanization. The regulation of socioeconomic and demographic development of large cities, efficient land use in core and surrounding areas, the distribution of cities as separate functional zones, protection of the ecological balance, solutions to problems of employment and housing conditions, improvement of socio-cultural services are typical issues targeted in most large cities. However, it is increasingly difficult to solve these problems in the context of high population growth rate, strengthening the socio-economic base and with the enlargement of the cities' territory. In the same time, more and more countries and regions in the world are facing such situation. Therefore, many studies globally deal with the large cities, looking at the scientific and theoretical foundations of their development management as well as at the corresponding practical measures.

The second half of the twentieth century is a period of high population growth rate. Since gaining independence, most of the Asian, African and Latin American countries have had

success in reaching socio-economic stability, and improvement of health care and social services compared to previous years. This positively affected the demographic conditions in these countries. High natural increase in the rural population has been taking place besides with socioeconomic problems faced by the villagers. As a result, mass migration of the population from rural areas to cities has been observed, and the urban population has grown rapidly in these countries. In the middle of the twentieth century, the yearly growth of the population has arrived to 40-50 million people (United Nations 1985), whereas it is of 85-90 million today (Demographic indicators 2013). The high population growth was followed by wide studies carried out by researchers since the middle of the 20th century, on cities from the United States (Vance 1971, Berry and Gillard 1977, Palm 1981), France (Bozhe-Garney and Shabo 1967), Great Britain (Dickinson 1962, Kholi 1993, Taylor 1993) and other countries. These studies were devoted to the regulation of the urban population distribution, to urban planning, and to the demographic overloading of capital cities (Chatel 2011). Providing social security is increasingly becoming a serious problem in most of the European large cities (Stilwell 2010). These problems are characteristic also for the U.S. (Yang et al. 2012), and Canada (Xu 2011, Fong and Shen 2011).

In most cities of the developing countries, the high natural increase of the population leads to an increase in number of the urban population. The world's population, including the urban population of the planet, is growing mainly due to these countries. In this connection, the geographical expansion of cities, and the demographic development regulation are among the chiefly studied topics (Ferreira and Marques 2006, Müller-Mahn and Abdelghani 2006, Tallet and Valette 2010).

The shown urbanization problems were typical also for Eastern Europe and the CIS countries during the transition period. Important research on cities, the management of urbanization, the development problems in the transition period etc. were conducted in Russia (Khorev 1975, Maergoyz 1987, Pivovarov 1994, Lappo 1997, Pertsik 2009) and Poland (Flaga 2010, Grabkowska 2011).

The management of the urbanization development has its specific problems in the United States, Western Europe and Australia, and these issues are still of research interest (Wilczynski and Wilczynski 2011, Pacione 2009). The studied problems include the regulation of the relations between cities and their surroundings, population ageing, intensification of external migrations, increase of ethnic diversity, adaptation of migrants to place of destination, and the relations between the immigrants and the indigenous population (Catney and Simpson 2010, Xu 2011, Fong and Shen 2011), social conditions and job supply, keeping the ecological balance. Some studies are devoted to the territorial enlargement of cities and its impact on the growth of economy efficiency (Gardiner et al. 2011).

As many regions and countries are at different stages of socioeconomic and demographic development, the problems of cities are regionally different. On the other hand, there are many common ways to solve the problems that may be practiced by most of them. Therefore, the results as well as the theoretical and methodological bases of the carried studies can be practically applied in many countries along with the needed measures to solve the cities' problems. In this regard, these studies can be taken into consideration and used to solve the problems of Greater Baku.

In the cities of the U.S., Canada, Western Europe and other developed regions, the population growth rate is lower. From this point of view, the management of urbanization and the measures of urban planning are essential to be taken into consideration. It is necessary to displace many financial centres, enterprises and facilities as well as buildings of secondary and tertiary sectors with large territories out to the suburb areas in order to benefit more effectively from the inner areas of the cities, and to prevent the unnecessary territorial enlargement of

cities. These objects may be relocated to other regions, if needed. Overgrowth of cities impedes their management, increasing the requirements for water, land, energy and heat (Yang et al. 2012). In some developed countries, the studies are devoted to the development of medium-size cities because of the challenges related to high urbanization, and the need of great financial amounts to manage the megalopolises (Korpi et al. 2011).

Study area

Baku is the biggest capital and port city in the Caspian Sea with its large population, social, economic, cultural and scientific potential. In 2012, the population of Azerbaijan was about 9235.1 thousand persons, of which 52.9% (4888.7 thousand) were dwellers of cities. Greater Baku covers 2130 sq. km of area. Taking into consideration the neighbouring settlements, the population of the city is about 2122.3 thousand people. 1194.8 thousand persons, or 56.9% of the population, are concentrated in the core city, and 927.5 thousand people are dwellers of the suburban settlements. 23% of the total population of Azerbaijan and 43.4% of the urban population of the country live in Baku (Azərbaycanın əhalisi 2012). Sumgayit city, the territorial unit of Absheron, Khirdalan city and 11 other settlements are included into the Baku agglomeration as well.

The high-speed development of Greater Baku led to the emergence of numerous problems in the last 20 years. Banished from Armenia, tens of thousands people have been settled in the territory of Greater Baku in the 90s. Besides this, the high growth and migration of the rural population have been responsible for the gradual enlargement of the territory of Baku. As a result of the enlargement of residential areas both in Baku and in the surroundings, the urban settlement as well as the cities of Khirdalan and Sumgayit physically merged with Baku. This situation led to the irrational use of lands which could be destined for rest and green areas, or the development of agriculture. Urban-type settlements have been created as transition ones in order to convert villages into cities during the Soviet period. Since the 30s of the twentieth century, many small clusters near Baku city enlarged and they were given the status of 'urban-type settlement' due to the rapid development of the petroleum industry. The conversion of villages into urban-type settlements as well as the emergence of new settlements was observed also in other regions of Azerbaijan in relation to the use of natural resources, and the creation of industrial and agricultural facilities (Əfəndiyev 2002). At the present, many settlements, of which most dwellers are not engaged in farming, are classified as urban-type settlements. About 70 such settlements are situated around Greater Baku.

Chaotic development of settlements and unregulated territorial enlargement of Baku resulted in the arising of 'pseudo-urbanization'. As a result of this process, the great agglomeration was formed and it is difficult to be regulated. In the meantime, overconcentration of population and economic areas in the territory of Greater Baku is negatively affecting its economic and demographic potential, and the development of other regions in Azerbaijan.

The development of petroleum industry in Absheron area is particularly mentionable here. Thus, the exploitation of the oil and gas reserves of the Caspian Sea since 1994, the creation and development of numerous foreign companies in the petroleum industry, the involvement of large portions of foreign investments and manpower into Baku resulted in the high development of this territory. Therefore, the development of the non-oil sector in the regions is necessary in order to reduce the great difference between Baku and other regions.

In addition to the significant expansion of Greater Baku, it is also notable that many old, low-rise and unfit areas, in term of living, encompass large territories within the core city. New buildings are being constructed in inside green areas or in places with old buildings, industrial, service and trade facilities that pulled down in recent years. Great challenges are faced concerning the maintenance of habitation because of the expensiveness of the construction

works, or when funding is managed at the expense of state budget. It also should be noted that the prices for lands both within the territory of Baku and its surroundings increased in recent years. Rules of urban planning are not observed in the central parts of the city where buildings were constructed in 20-80s of the twentieth century, and the situation continues to exist along with the new buildings. In the meantime, the overgrowth of automobiles and population number in recent years is responsible for the city's overloading with vehicles and public transport, causing jams on the roads. Traffic stoppers take place not only in the central districts but also in the edge areas as they face the outward flow of population from the city in the morning and in the opposite direction in the evenings because significant parts of the population are dwellers of the suburban areas.

It should be noted that land is a valuable resource in Greater Baku. There are numerous large living blocks in the territory of agglomeration. In the meantime, lands usable for the farming activity area and the former areas of industrial activity as well as territories of oil fields have been converted into living blocks. As a result, natural and environmental potential of the lands have been deteriorated. Challenges in the provision of hot water, electricity and heat are faced by the dwellers. Also, it is necessary to determine the land reserves suitable for the creation of industrial, commercial, green and leisure-time areas.

In order to solve the above-mentioned problems of Greater Baku, a number of facilities of industry, transport, commercial and infrastructure are being relocated in the surroundings and the other regions. These include the Seaport, Ship-repairing and Shipbuilding, Oil Refinery Plant, Oil Engineering Plant, Bus Station, a number of trade centers, storehouses and facilities of infrastructure. Also, new buildings and living blocks are being formed in Gara Sheher area. The ring roads, bridges, arterial highways, many-branched roads, and tunnels are also constructed around the city in order to prevent traffic jams and to facilitate the transport functioning. However, the taken measures are not sufficient yet and the implementation of influential works is still needed.

Research on the studied area

Regulation on the development of cities and effective urban planning are necessary issues in terms of managing the urbanization processes. Urban planning is analyzed by many scientific works. The important problems taken into consideration when developing urban planning are the following: management of transport; grouping of cities as functional territories; rational use of land resources; preservation and restoration of natural and environmental conditions; distribution of areas of habitation and manufacturing; maintaining the historical and architectural monuments; ethnic traditions as factors in urban planning.

The enlargement of territories in the process of urban development was the study subject in several works of the researchers in the United States, Russia and Poland. The development and expansion of cities as well as the economic potential of urban areas are studied by researchers from China (Qin et al. 2006, Zhang and Sun 2011), India (Jesitha et al. 2011), Brazil (Goncalves et al. 2006), Mexico (Tallet and Valette 2010), and other countries.

The management of cities' development, the regulation of cities and their suburbs and employment provision are studied in the United Kingdom (Krueger and Gibbs 2010, Greasley et al. 2011, Champion and Townsend 2011), Germany (Heinelt and Zimmermann 2011), Poland (Grabkowska 2011), Southern Europe, and the CIS countries (Lappo 1997, Pertsik 2009). Not only large cities but also developing small clusters are the study objects of works of scientists from the United States or the United Kingdom. All of this research deals with the priorities in the development of cities and the ways to solve the involved problems (Jesitha et al. 2011, Lee 2011).

In the second half of the twentieth century, research on urban planning was carried out in the United States (Kresl and Singh 2012, Woo and Guldmann 2011), Canada (Yeates 1990), Australia and Western Europe. Special attention is given also to the investigation of cities of global importance (Sassen 1994, Taylor 1993), experience which is worth to be used.

Cities have been also studied by researchers from the rapidly developing countries such as China, or from the Middle East (Abramson 2006, Paquot 2006, Ning 2011). In particular, the population dynamics and the enlargement of small and medium cities are investigated. For example, in the Ranchi city of India, which has an area of 177 sq. km., the number of new constructed buildings has increased by 15% in the last 10 years whereas the growth of the population number was about 29%. Consequently, the lands usable for farming were reduced, the ecological situation was deteriorated, and traffic jams increased in this city (Shikha and Singh 2011).

The management of capital cities and the maintenance of proportional socioeconomic development hold significant place among different studies. These problems are studied in most countries as an important issue (Champion and Townsend 2011). As studies carried out in Western Europe show, the political factors influence the employment rate and the population growth at less extent (Greasley et al. 2011). The development of infrastructure and environmental protection (Torrance 2009, Polinna 2012), the cities' place within the global urban network (Ancien 2011, Krueger and Gibbs 2010, Chubarov and Sluka 2012), influence the changing factors of the capital cities development (Heinelt and Zimmermann 2011).

In China and India, the process of cities' physical extension is driven by the development of market relations while strict demographic policies target the elimination of this process (Chaberko et al. 2011, Jesitha et al. 2011).

Development and urban planning of Greater Baku was conducted on the basis of the socialist division of labour. The principles of city-planning in Baku were followed on the basis of the soviet methodology, and equally by various cities with different functions, natural-geographic conditions, and economic structure. Micro-geography, management and planning of urban districts have not been taken into consideration properly, whereas studies on core cities are usually devoted on defining the future priorities of cities' development. Micro-geography of core cities plays an influential and defining role in solving the development problems. In this regard, solutions at the problems of city-planning in Greater Baku can be reached only in a definite time. It would be useful to take into consideration the experience gained by the studies carried out in the United States, Western Europe and other countries in order to find solutions to problems related to the field of city planning: the demographic development of cities; balanced ways of development concerning the capital city and its peripheries; regulation of the urban areas expansion and connections between cities, etc. Despite the high concentration of population in the surrounding areas of cities, these countries have gained success in the improvement of activities with social objectives, and also in the urban planning of the suburbs.

For many years, substantial differences were observed in the research methodology, theoretical base and solving of cities problems and urbanization between the USSR and Western Europe. Isolated development of regions in relation to each other resulted in differences both for the management of development and planning, and the approaches taken to solve the involved problems. In cities of Europe and America, the emphasis is laid upon the study of solutions to problems appeared in the core areas of the agglomeration. In the meantime, special attention is given to the micro-geographical approach and the solving of socio-cultural problems of certain territories.

In the last 20 years, the approaches of different studies in terms of methodology and scientific analysis are getting to be relatively similar between the scientific schools of Europe and

America, and the post-Soviet space as well as Azerbaijan. The previously isolated studies carried out by these sides become closer and integrated to each other. In this paper, the analysis of the problems of Greater Baku as well as the development of their solutions are considered as main issues of the study, with making reference chiefly on the theoretical and methodological theses.

Description, analysis, statistic method and mapping were applied as main methods in conducting the studies. In the meantime, field works were implemented during this research. Results of the lay-out taken from different entities and agencies were used as well.

Results and discussion Social-economic and demographic dynamics

At the end of the 19th century, the growth in the exploitation of oil reserves and the development of oil industry gave an impetus to the emergence and development of hard economic base in Baku and its surroundings, being also responsible for the higher rate of the population growth, and the creation of new manufacturing facilities in the cities of other regions (Fig. 1 and Fig. 2; *Black dots represent the industrial facilities; the others are agricultural areas; circumferences are drawn by each 5 km*).

Looking at the historical development of the capital city of Azerbaijan in the 19th and 20th centuries, it is mentionable that Baku developed as an isolated area from the other regions of Azerbaijan. This resulted in sharp differences between the social-economic and demographic potentials of Baku and the other regions. In 1873, Baku was the fifth biggest city after Shamakhi (25.1 thousand people), Shusha (24.6 thousand people), Sheki (21.4 thousand people) and Ganja (18.6 thousand people). By 1916, the population of Baku having 262.4 thousand residents was 4.55 times larger than the second biggest city, Ganja, which had 57.7 thousand residents (Eminov 2005).

Rapidly developing, Baku covered the amphitheatre zone completely by 1918. In 1920, there appeared new city areas like New Baku, Bayil, Gara Sheher and Ag Sheher ('White City') in addition to the Old City of Baku. Around the city, the territories of Keshla, Ahmadli and Zigh also existed. Nevertheless, the city planning and developing was not well organized, and this resulted in irregular territorial development.

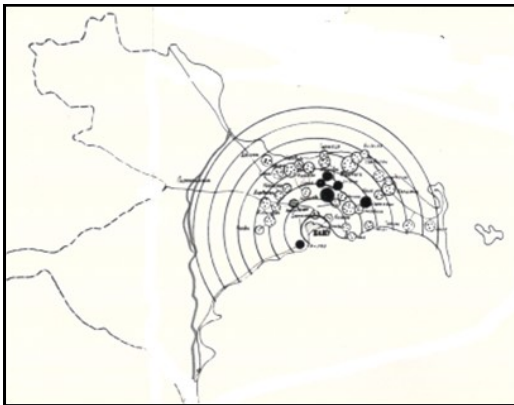


Fig. 1 – The development of Greater Baku before 1870

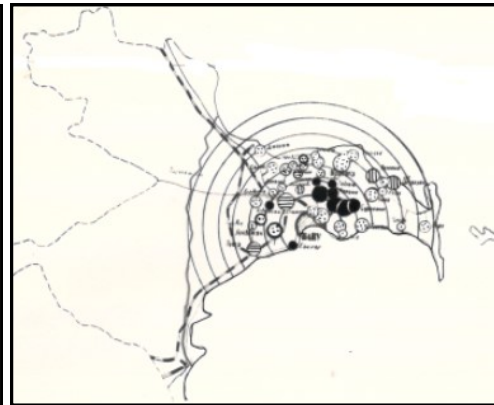


Fig. 2 – The development of Greater Baku in 1870-1913

Sharp differences in the population growth rates continued in the 20s and 30s, particularly in the 50s and 60s of the 20th century (Fig. 3 and Fig. 4). At present, the population of Baku is 6.6 times larger than the population of the second most populated city of Azerbaijan which is still Ganja (320.7 thousand people). There were many problems in the development of the regions while Baku became a large industrial center (Davidovich 1971).

Looking through the scale of the former USSR, it also should be mentioned that the social-economic and demographic development rates of the cities of the USSR were depending on their socio-political and economic function, economic structure, geographic position and climate. State agencies were controlling the social and economic development, the supply of housing and work places, the passport registrations and the employment based on this registration. The management of the cities was implemented through different administrative ways and measures. This allowed maintaining the equilibrium in the economic and social-demographic development but the problems of city planning impeded the effective solving of the cities' issues. The surrounding areas of the cities were covered with living districts in the conditions of large areas full of old buildings previously constructed in the center. The territories of cities were increasing due to the arising of new living blocks at the edges. Significant amount of financing was needed in order to demolish the old buildings in the centers, and to rebuild new housing, socio-cultural and educational facilities. The central apparatus was not interested to find solutions to the problems at the expense of financial allocations

Many features of the development of cities in the former USSR were typical for Azerbaijan and its capital city as well. There are many problems in the regulation of the population distribution in Baku and its settlements concerning the water supply, rendering natural gas, energy provision and meeting the communal needs of the population.

The period after 1988 may be characterized as a special stage in the social-economic and demographic development of Baku. Although the number of settlements (9) outside Baku did not increase in 1989-1999, the number of urban-type settlements reached to 51 by 1999 due to the concentration of army refugees and mass migration of population from other regions. There were 704.4 thousand people living in those urban-type settlements outside Baku by the shown year (Table 1). This is 39.4% of the population living in the territorial unit of Baku city.

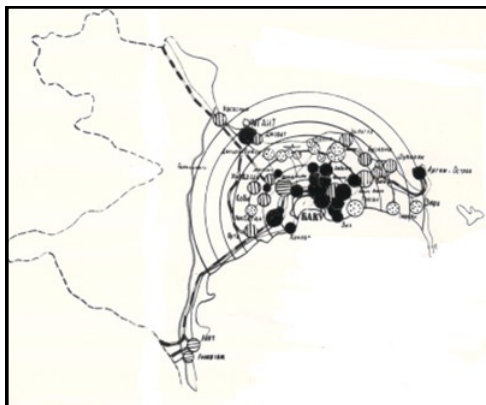


Fig. 3 – The development of Greater Baku during 1913-1939

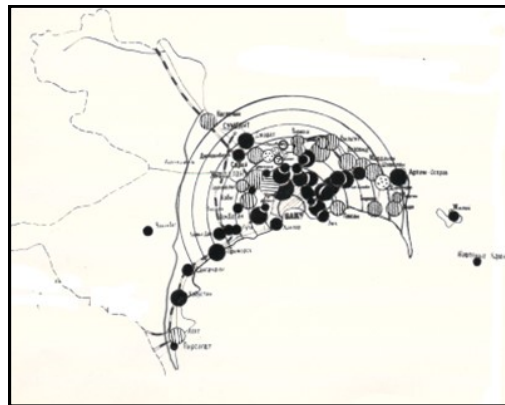


Fig. 4 – The development of Greater Baku during 1939-1990

Table 1

The population growth in the cities and settlements of Baku agglomeration

| Year | Population (thousand people) | | | | | City population (percentage) | | | |
|------|------------------------------|----------------------|--------------|----------|-------------------------|------------------------------|--------------|---|-------------------|
| | Baku Agglomeration | Absheron and Sumgait | Greater Baku | of which | | Absheron and Sumgait | Greater Baku | Share within Greater Baku, (percentage) | |
| | | | | Baku | Surrounding settlements | | | Baku | Surrounding areas |
| 1842 | 33.5 | - | 33.5 | 6.0 | 27.5 | - | - | 17.9 | 82.1 |
| 1873 | 66.2 | - | 66.2 | 15.1 | 51.1 | - | - | 22.8 | 77.2 |
| 1886 | 141.4 | - | 141.4 | 86.6 | 54.8 | - | - | 61.2 | 38.8 |
| 1897 | 193.7 | - | 193.6 | 112.0 | 81.6 | - | - | 57.9 | 42.1 |
| 1913 | 361.9 | - | 361.9 | 214.7 | 147.2 | - | - | 59.3 | 40.7 |
| 1926 | 567.3 | - | 567.3 | 453.3 | 114.0 | - | - | 79.9 | 20.1 |
| 1939 | 794.6 | 19.8 | 774.8 | 544.0 | 230.8 | 2.5 | 97.5 | 70.2 | 29.8 |
| 1959 | 1039.9 | 68.8 | 971.1 | 642.5 | 328.6 | 6.6 | 93.4 | 66.2 | 33.8 |
| 1970 | 1422.1 | 156.6 | 1265.5 | 851.6 | 413.9 | 11.0 | 89.0 | 67.3 | 32.7 |
| 1979 | 1798.8 | 249.0 | 1549.8 | 1022.0 | 527.8 | 13.8 | 86.2 | 65.9 | 34.1 |
| 1989 | 2104.5 | 309.6 | 1794.9 | 1190.3 | 604.6 | 14.7 | 85.3 | 66.3 | 33.7 |
| 1999 | 2130.9 | 342.0 | 1788.9 | 1084.5 | 704.4 | 16.1 | 83.9 | 60.6 | 39.4 |
| 2009 | 2512.7 | 466.9 | 2045.8 | 1140.9 | 904.9 | 14.6 | 81.4 | 55.8 | 44.2 |
| 2012 | 2602.5 | 480.2 | 2122.3 | 1194.8 | 927.5 | 18.5 | 81.5 | 56.3 | 43.7 |

Notes: The population of Greater Baku and the surrounding areas includes also the rural settlements according to the data of 1842-1913. The data of the following years is given taking into account only the population of the settlements. In 1926, 53246 villagers, and in 1939, 21.1 thousand people lived in Greater Baku. This decrease is related to the status of urban settlements given to clusters. The data on settlements by 2009 includes the inner ones too (i.e. the settlements of Keshla and Ahmadli). The population number behind the boundaries of Greater Baku is very small and therefore not given by 1939.

Sources: The data by 1842 is given based on Berezin's book "Travelling in Dagestan and Caucasus" (Petersburg 1850); the statistics by 1873 and 1913 is based on V. A. Afandiyev's book "The planning of the Baku agglomeration zones" (1985: 42-46) and his PhD thesis; the data by 1886 is based on Svod Statisticheskikh (1893); the data by 1926 is based on Muradov's "İnsan potensialı" (2004: 51); the data by 1939 and 1959 is based on İtogi 1963 (p.15); the data by 1970-1999 is based on Z. N. Eminov's "Azərbaycanın əhalisi" (2005, p. 369) and İtogi 1981; and the data by 2009 and 2012 is based on "Azərbaycanın əhalisi-2011" (2012: 63-67).

The population of the settlements of Baku increased by 100.0 thousand people despite the mass migration of Russians, Armenians and other Russian-speaking populations after 1989 (Azərbaycan Respublikası 2000). The number of Russians decreased from 295.5 thousand to 119.4 persons. The number of Armenians fell from 180.0 thousand to 400 persons. The number of Jews also became 20.0 thousand lesser in Baku city within 1989-1999. Most Azerbaijani refugees expelled from Armenia in 1988 (200 thousand people) settled in Absheron. This process accelerated the concentration of the population in this territory. The population of the settlements in the Absheron region and Sumgait city increased by 85.2 thousand people. The population of Sumgait increased up to 256.8 thousand people. In 1999, the total population of the agglomeration was of 2130.9 thousand people, 342.0 thousand people or 16.1% of which were the population living outside Greater Baku (Eminov 2005).

According to the 2009 census (Azərbaycan Respublikası 2010), the population of Greater Baku was of 2045.8 thousand people. Taking into consideration the refugees and displaced people, this indicator was 2246.0 thousand. Most of the latter group of people was temporarily settled in the surrounding settlements of Baku. For the present, new housing buildings are being constructed for them in the urban settlements. In some cases, special settlements (surrounding areas of Umid, Mushfigabad and Masazir settlements) are being created for this group of population.

The concentration of population in large numbers in the vicinity of Greater Baku has been reflected also on the migration data. As the following table shows, in 2001-2005, the number of the population increased by 7,8 thousand people, whereas from 2006 to 2010 this growth was of 213,0 thousand people. Most new comers were settled in Baku city. In the meantime, the number of the Khirdalan population grew several times. This settlement reached the status of city, and its population number has grown by 93 thousand people (Table 2).

Table 2

The natural increase and net migration of the population in Baku and the surrounding administrative regions (Absheron economic region), in thousand people

| Area unit | 2001-2005 | | | 2006-2010 | | |
|------------------------------|------------------|---------------|----------------|------------------|---------------|----------------|
| | Natural increase | Net migration | Overall growth | Natural increase | Net migration | Overall growth |
| Baku city | 61.0 | +5.3 | 66.3 | 104.4 | 114.4 | 218.8 |
| Sumgait city | 10.3 | -2.8 | 7.5 | 15.6 | 4.8 | 20.4 |
| Absheron region | 3.8 | +5.1 | 8.9 | 6.2 | 93.5 | 99.7 |
| Khizi region | 0.5 | +0.2 | 0.7 | 0.7 | 0.3 | 1.0 |
| The economic region in total | 75.6 | +7.8 | 83.4 | 126.9 | 213.0 | 339.9 |

Therefore, new settlements and residential areas have to be displaced to other regions and to be close to sources of agricultural production. This would also positively affect the employment.

The creation of huge living areas in the Absheron peninsula will lead to the deficiency of land resources in the future. At present, the population density of Baku is 5430.9 people/km² whereas it is 489.2 people/km² in the economic region of Absheron. The average population density in Azerbaijan is 106.6 people/km² (2012).

Since 2010, a new city as residential area for over 600 thousand people is being constructed in southern Absheron. In this connection, a territory with an area of 2.0 thousand hectares has been destined. The initial investment has been identified at 125 billion USD. It would have been more efficient to build this city outside of the Absheron peninsula, for example in Guba-Khachmaz or Lankaran-Astara regions, where tourism is highly developed and the opportunities to use the skilled work force is high. These territories are favourable for developing special technologically based economic zones as well. As for the project in Absheron, it will result in further concentration of population in the Absheron peninsula. Another big project in Baku is the redevelopment of Gara Sheher in order to convert it to a modern residential and business territory that will be called White City. The works are carried out based on initial planning and we can consider this as great steps towards the renovation of the districts of Baku. At the same time, the creation of a head plan of Baku until 2030 is underway.

The management of this plan would allow regulating the urbanization process in Baku and Absheron region.

Depicting priorities for the further development of the agglomeration

The landscape of Baku city looks like an amphitheatre. The first zone in the shape of terrace is covering 1.5 km long area alongside the Caspian Sea, and its height varies between 15-20 metres. The second terrace is above the first one, and the third zone is 140-160 metres of height and more and it is located in western and eastern parts of the amphitheatre. The maximum height is 200 metres, with 150 metres in the eastern part. The landscape in Bilajari and Bakikhanov rises in weak form (Aliyeva 1988). The most intensive exploitation took place on the third terrace in the modern period.

According to the development planning of Baku in the beginning of 20th century, the western area from Chambarak (presently, west from M. Huseyn Street) was considered a landslide and unsuitable for construction. The landslides were regularly observed in this area. The mentioned area has not been populated for a long time, and it was occupied by private low buildings in recent years. In subsequent periods, as a result of the landslide on the Bayil part of Salyan highway, the Lukoil gas station was seriously damaged in 2000. Resettlement in this territory, as well as Badamdar, Shikh and Bibi Heybat settlements, was being observed later. This process must be prevented. In 2013, there was a landslip in Badamdar and the works on overcoming the effects are being implemented.

The stages of Baku's development are clearly visible in its planning. Feudal, capitalist (Vance 1971), socialist and modern stages of development are easily observable in urban planning, architectural design and construction areas. Old City Castle, the symbol of the development at middle ages (IX-XIX centuries) is located in the nucleus of the city centre. The part of Baku remaining from the feudal ages has not incurred any major changes and there is no need to do so. These parts represent the historic architectural style of Baku.

The flow of finances through the oil boom started in the 1870s entailed the creation of the second zone of Baku. This zone of construction could be called the 'capitalist Baku' which includes the surrounding areas of the Old City Walls and the areas from the current avenues of Neftchilar, Istiglaliyyat, 28 May, Nizami, Azerbaijan, Khagani and Bulbul to the Caspian Sea. These areas must be planned as residential, socio-political, cultural and service areas. Nowadays, many modern buildings of capitalist architecture were constructed in these areas, but this is not advisable from the view of urban planning and this kind of constructions should not be allowed in the future.

Buildings constructed between 1920 and 1990, occupy 60-70% of the city's territory. 5-7-storey residential buildings constructed during socialism are less in the territory compared with the low storey houses of that period. The reconstruction of these areas should be completed in the near future.

In the urban agglomerations, the core part of the cities affects and regulates the development of the neighbouring settlements. In the Baku agglomeration, the economic and demographic developments have interconnected with each other. Starting from the 60s and within the following decades, disruptions in the functional division of Baku in the process of territorial development has been observed. This process is underway at present as well. The expansion of the city's territory was irregular and unplanned. The elimination of this problem is difficult in the present. It is not urgent and very necessary to create new living blocks in the place of all the old demolished buildings that had less height. Most five-storey buildings built in the 60s and the following years are not actually useful for living. The construction of buildings and the creation of new residential blocks at slopes and territories with high risk of landslip is another problem. The increase of buildings density in the conditions of the shortage of unpopulated

areas represents the features of several suburban districts like Nizami, Bilajari, Patamdar, Sulutepe, Bail, Yeni Nizami, Gunashli, Gunashli, but it happens also in some new residential areas. Limitations on further construction of residential buildings must be defined in the mentioned areas where landslips is continuously taking place as a result of which the population suffers, and economy is seriously being damaged.

It is necessary to implement different works of prevention referring to the territorial enlargement of the settlements within the agglomeration. Improving the planning works within the boundaries of the settlements is necessary as well. The development of the settlements located inside the recreational areas as well as the population growth in these areas must be strictly controlled in particular. At present, most de facto recreational areas have turned into permanent residential areas.

The joining between the settlements and Baku took place a few years before the collapse of the USSR. Bilajari, Bakikhanov, Sabunchu, Bulbula, Garachukhur, Amirjan settlements de-facto became a part of Baku. 1-2 storey buildings constructed in these settlements were added to the previously constructed ones as a result of which the situation became more complicated in the Greater Baku.

The growth rate of the demographic enlargement of the surrounding settlements is higher compared to Baku in the recent years. Garachukhur (81.1 thousand people), Bakikhanov (70.6 thousand people), Bilajari (45.8 thousand people), Amirjan (29.8 thousand people) and Badamdar (21.6 thousand people) settlements are already a component part of Baku. As these settlements are still administratively independent, the situation results in the disorderly expansion of their territories.

In 2003-2008, the newly created working places in the economic regions of Azerbaijan have not positively affected the balanced development of the Baku agglomeration. The main proportion (41.6%) of the newly created jobs, information based on the "State Program on social and economic development of regions (2004-2008)", was created by private individuals. The following places are occupied by companies functioning in agriculture and forest industry (11.1%), machinery industry (10.3%), construction (9.0%), and wholesale and retail (8.4%). The labour-intensive industries are growing with lower rates. The number of companies in machinery, chemical, light- and food industries engaged in processing of agricultural products is very small. Only 8-13% of the permanent jobs in the regions are concentrated in the industries.

The new workplaces are distributed unevenly by the regions of the country. Most of them are shared by Absheron (Greater Baku), Aran and Ganja-Gazakh economic regions. 61.4% of all workplaces, including 65.1% of constant ones, fall to the share of these three regions. The share of Baku may grow further, and such situation is not desirable.

Although Greater Baku is a highly concentrated industrial area, this concentration is still a continuing process. 27.6% of the permanent work places (153.2 thousand) that were created fall to the share of Baku, according to the State Program. The development of other regions is lagging behind Absheron considerably. The intensity of migration is unfavourably increasing. At the same time, there are big gaps between the regions and the capital cities in terms of social and economic development. The previously shown processes complicate the use of the natural resources and the economic and demographic potentials of the regions.

The statistic data on employment in Greater Baku and the regions are also very different. 67.2% of the industrial workers are employed in the Absheron peninsula (Greater Baku). Since 2003, the number of the workers in the secondary sector has increased in Absheron, Nakhchivan, Guba-Khachmaz, Daglig Shirvan and Lankaran-Astara regions. Baku exceeds

other regions of the country by several times in the absolute number of doctors and nurses, and also when considering these indicators per 10 000 people. In 2007, 62.1% of the doctors and 37.9% of the nurses represented the medical enterprises staff of Baku.

The development of the labour-intensive areas of economy is going slowly in the regions of Azerbaijan. Many industrial facilities benefit from the favourability of their functioning in the suburban areas and the surroundings of Baku. The number of workplaces created in Absheron administrative region exceeds the corresponding figure, fixed for Baku by 2.0 times. The number of workplaces in the processing industry of Absheron is 2.4 times much more than the one of Baku. These processes entailed the expansion of the housing areas in the surrounding areas of Baku. As we think, it is necessary to give the agricultural lands in the Absheron region to the administration of Binagadi and Surakhani settlements. This is necessary in order to prevent the land deficit that will arise in Baku in the next decade. Both land deficiency and shortage in water supply have turned to serious problems. The non-populated favourable areas are decreasing. The water supply should be organized in a better way in the Absheron peninsula. The surface of the useful lands is small because most unpopulated land reserves were polluted by the oil industry and the sewage or solid wastes thrown inside the territory.

At present, in terms determining the development priorities of Greater Baku, 4 functional zones (areas) can be distinguished in the studied territory. This division is based on the economic and geographic position, specialization of economic areas, and also local on the natural and economic potential, including the recreational resources (Fig. 5):

1. North-Eastern zone located in the districts of Khazar and the newly created Pirallahi. Recreational business, services and agriculture could be the leading directions of economic development;
2. South-Western zone located in the Garadagh region. The development of industrial and transportation areas could be prioritized here. The construction of shipbuilding- and ship-repairing factories as well as the foundation of the new port on the bay of the Caspian Sea would positively affect the economic development of this zone;
3. North-Western zone which includes Sumgait city. Industry and recreational business can be developed as main economic areas here;
4. Western zone within Absheron administrative region. Agriculture should be developed as the main economic field in this zone.

Conclusion

In order to prevent the territorial expansion of Greater Baku and the overloading of the city, scientific and public explanations as well as economic, administrative and demographic regulations must be conducted. The administrative subordination of Greater Baku to a unique center is seen as advisable in terms of solving the existing problems.

It is the time to liquidate the status of (urban-type) settlements of Ahmadli, Keshla, Bibi-Heybat, Bilajari, Bakikhanov, Garachukhur and Badamdar at present. Connected to Baku, the noted settlements should be included into the city as its integral parts.

The prevention of mass migration of the population to Great Baku necessitates also the rapid development of the large cities due to their advantageous economic potential.

The industrial areas operating on the basis of bringing, storage and procession of agricultural products must be removed not only from Baku but from Absheron itself. The displacement must be related also to the enterprises whose functioning is not in harmony with the economic structure of Baku. This displacement would facilitate the functioning of Baku as a city, and it would give an impetus to the development of small and medium cities.

Since gaining the independence, many measures were taken for the development of the Greater Baku under the state control. Actually, different works on urban planning and development are currently covering the overall territory of the agglomeration. Urban planning works were carried out without taking into consideration the requirements concerning mainly the residential buildings with less height. Regretfully, the construction works were resulting in the enlargement of the territory of Baku and the surrounding settlements as well as in

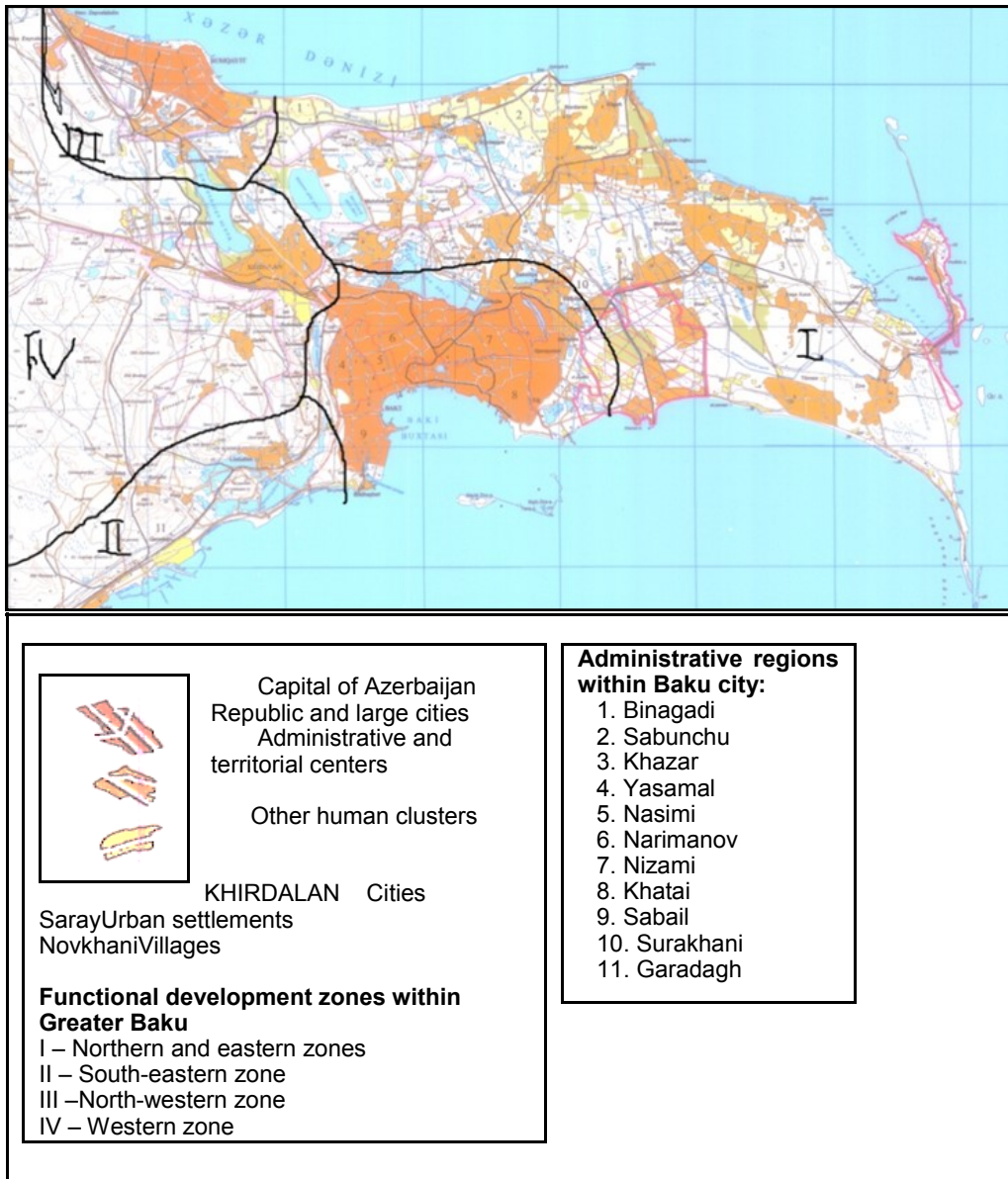


Fig. 5 – The settlement areas in Greater Baku in the contemporary period

decreasing the green- and parking areas. Therefore, the following requirements of the urban planning works are necessary in the process of creating new residential blocks, and they must be carried out under the strict control. The unique urban planning must be carried out in Baku, with taking into consideration the experience of the large cities of the world. In this regard, the role of the restriction measures is significant.

References

- ABRAMSON D. B. (2006), *Urban planning in China: Continuity and Change: What the Future Holds May Surprise You*, J. American Planning Assoc. 72 (2), 197-215.
- AFANDIYEV V. A. (1985), *The planning of the Baku agglomeration zones*, PhD thesis, Baku.
- ALIYEVA A. S. (1988), *Planirovka i zastroyka goroda Baku (Planning and construction of Baku), (1946-2000)*, Baku.
- ANCIEN D. (2011), *Global city theory and the new urban politics twenty years on: The case for a geohistorical materialist approach to the (new) urban politics of global cities*, Urban Studies 48 (12), 2473-2493.
- AZƏRBAYCAN RESPUBLİKASI ƏHALISININ SIYAHİYA ALINMASI 1999 (Population census in Azerbaijan Republic 1999) (2000), Bakı.
- AZƏRBAYCAN RESPUBLİKASI ƏHALISININ SIYAHİYA ALINMASI 2009 (Population census in Azerbaijan Republic 2009) (2010), Bakı.
- AZƏRBAYCAN RESPUBLİKASI ƏHALISININ 2001-2010 illərdə sayı və təbii hərəkəti (Number and natural movement of population in Azerbaijan Republic in 2001-2010) (2002-2011), Baku.
- AZƏRBAYCANIN əhalisi 2011 (Population of Azerbaijan 2011) (2012), Baku, 63-67.
- BEREZIN I. I. (1850), *Travelling in Dagestan and Caucasus*, S-Petersburg.
- BERRY B. J. L., GILLARD Q. (1977), *The changing shape of Metropolitan America. Commuting patterns, urban fields and decentralization process 1960-1970*, Cambridge MA.
- BOZHE-GARNYE J., SHABO J. (1967), *Ocherki po geografii gorodov (Essays on the geography of cities)*, Moskva.
- CATNEY C., SIMPSON L. (2010), *Settlement area migration in England and Wales: assessing evidence for a social gradient*, Transaction of the Institute of British Geographers 35 (4), 571-584.
- CHABERKO T., FEDIRKO A., KRETOWICZ P. (2011), *Social and spatial dimensions of demographic processes in Beijing municipality at the turn of the 21st century*, Bulletin of Geography. Socio-economic Series 16, 5-19.
- CHAMPION T., TOWNSEND A. (2011), *The fluctuating record of economic regeneration in England's second-order city-regions, 1984-2007*, Urban Studies 48 (8), 1539-1562.
- CHATEL C. (2011), *Une mesure du déclin démographique des villes allemandes de 1820 à 2010*, Géocarrefour 86 (2), 81-93.
- CHUBAROV I. G., SLUKA N. A. (2012), *Krupneyshiye agglomeratsii KNR v sisteme global'nykh gorodov (The largest agglomerations of the People's Republic of China within the system of global cities)*, Vestnik MGU 5 (2), 32-39.
- DAVIDOVICH V. G. (1971), *Rasselenie v promyshlennykh uzlakh (Settling in the industrial centers)*, Moskva.
- DEMOGRAPHIC INDICATORS OF AZERBAIJAN (STATISTICAL PUBLICATION) 2012 (2013), *State Statistical Committee of Azerbaijan Republic*, Baku.
- DICKINSON R. (1962), *The West European City*, Routledge, London.
- EMINOV Z. N. (2005), *Azərbaycanın əhalisi (Population of Azerbaijan)*, Bakı.
- ƏFƏNDİYEV V. Ə. (2002), *Urbanizasiya və Azərbaycanın şəhər yaşayış mərkəzləri (Urbanization and urban clusters of Azerbaijan)*, Bakı.
- FERREIRA M. C., MARQUES M. L. (2006), *Análise da densidade de ocupação do aglomerado urbano de região metropolitana de São Paulo pela estimativa de dimensão fractal*, Geografia 31 (2), 293-316.

- FLAGA M. (2010), *Demographic consequences of suburbanization in selected towns in the eastern borderlands of Poland*, Bulletin of Geography. Socio-economic Series 14, 5-22.
- FONG E., SHEN J. (2011), *Explaining ethnic enclave, ethnic entrepreneurial and employment niches. A case study of Chinese in Canadian immigrant gateway cities*, Urban Studies 48 (8), 1605-1633.
- GARDINER B., MARTIN R., TYLER P. (2011), *Does spatial agglomeration increase national growth? Some evidence from Europe*, J. Economic Geography 11 (6), 979-1006.
- GONCALVES C. D. A. B., SOUZA I. M., PEREIRA M. N., FREITAS C. C. (2006), *Análise do ambiente residencial urbano visando a inferencia de populace utilizando dados de sensoriamento remoto orbital de alta resolução*, Geografia 31 (2), 371-402.
- GRABKOWSKA M. (2011), *Inner-city of pre-war tenement houses in Gdansk*, Bulletin of Geography. Socio-economic Series 15, 117-129.
- GREASLEY S., JOHN P., WOLMAN H. (2011), *Does government performance matter? The effects of local government on urban outcomes in England*, Urban Studies 48 (9), 1835-1851.
- HEINELT H., ZIMMERMANN K. (2011), *'How can we explain diversity in metropolitan governance within a country?' Some reflections on recent developments in Germany*, International Journal of Urban and Regional Research 35 (6), 1175-1192.
- ITOGI VSESOYUZHNOY PEREPISI NASELENIYA. AZERBAIDJANSKAYA SSR 1959 (All-Union Population Census, Azerbaijan SSR) (1963), Moskva.
- ITOGI VSESOYUZHNOY PEREPISI NASELENIYA 1970 G. PO BAKINSKOMU GORSOVETU (All-Union 1970 Population Census by Baku City Council) (1981), Baku.
- JESITHA K., BINDHYA M. K., HARIKUMAR P. S. (2011), *Environmental footprint of Calicut, a city in the west coast of India*, III International Geography Congress, Abstract Volume, Kozhikode, 30-31.
- KHOLL P. (1993), *Gorodskoye i regional'noye planirovaniye (Urban and regional planning)*, Moskva.
- KHOREV B. S. (1975), *Problemy gorodov (Urbanizatsiya i yedinaya sistema rasseleniya v SSSR) (The problems of cities. Urbanization and a unified settlement system in the USSR)*, Moskva.
- KORPI M., CLARK W. A. V., MALMBERG B. O. (2011), *The urban hierarchy and domestic migration: the interaction of internal migration, disposable income and the cost of living, Sweden 1993-2002*, Journal of Economic Geography 11 (6), 1051-1077.
- KRESL P., SINGH B. (2012), *Urban competitiveness and US metropolitan centres*, Urban Studies 49 (2), 239-254.
- KRUEGER R., GIBBS D. (2010), *Competitive global city regions and 'sustainable development': An interpretive institutional account in the South East of England*, Environmental and Planning A 42 (4), 821-837.
- LAPPO G. M. (1997), *Geografiya gorodov (Geography of cities)*, Moskva.
- LEE N. (2011), *Ethnic diversity and employment growth in English cities*, Urban Studies 48 (2), 407-425.
- MAERGOYZ I. M. (1987), *Geograficheskoye ucheniye o gorodakh (Geographical theory of cities)*, Moskva.
- MÜLLER-MAHN D., ABDELGHANI M. (2006), *Urbanisierung in Ägypten*, Geographische Rundschau 58 (11), 12-20.
- MURADOV Ş. M. (2004), *İnsan potensiali (Human potential)*, Baki, 51-63.
- NING Y.-M. (2011), *Definition of Chinese Metropolitan Areas and Large Urban Agglomerations: Role of Large Urban Agglomerations in Regional Development*, Scientia Geographica Sinica 31 (3), 257-263.
- PACIONE M. (2009), *The view from the tower: Geographies of urban transformation in Glasgow*, Scottish Geographical Journal 125 (2), 127-181.
- PALM R. (1981), *The geography of American Cities*, New York.
- PAQUOT T. (2006), *The urbanization of customs is at work in India*, Villes en développement 71, 7-34.

- PERTSIK E. N. (2009), *Geourbanistika: Geografiya mirovoy urbanizatsii (Geourbanistics: Geography of the world urbanization)*, Moskva.
- PIVOVAROV I. L. (1994), *Sovremennaya urbanizatsiya. Kurs lektsiy (Contemporary urbanization: The course of lectures)*, Moskva.
- POLINNA C. (2012), *London – Erneuerung einer Metropole*, Geographische Rundschau 64 (6), 12-18.
- QIN G., ZHANG P.-Y., JIAO B. (2006), *Formation mechanism and spatial pattern of urban agglomeration in Central Jilin of China*, Chinese Geographical Science 16 (2), 154-159.
- SASSEN S. (1994), *Cities in a World Economy*, London.
- SHIKHA K., SINGH P. R. (2011), *Impact analysis of urbanisation activities on land use: A study of Ranchi municipal corporation*, III International Geography Congress, Abstract Volume, Kozhikode, 166.
- STILWELL J. (2010), *Ethnic population concentration and net migration in London*, Environment and Planning A 42 (6), 1439-1456.
- SVOD STATISTICHESKIKH dannyykh o naselenii Zakavkazskogo kraya, izvlechennykh iz posemeynykh spiskov 1886 g. (Compilation of statistic data on the population of Caucasus region based on the 1887 year family census) (1893), Tiflis.
- TALLET B., VALETTE J. F. (2010), *Une ville qui bouge, une ville qui change : Métropolisation et redistribution de la population dans l'agglomération de Mexico*, Espace, populations, sociétés 2-3, 379-393.
- TAYLOR P. J. (1993), *Political Geography: World-economy, Nation-state and Locality*, Longman, London.
- TORRANSE M. (2009), *Reconceptualizing urban governance through a new paradigm for urban infrastructure networks*, Journal of Economic Geography 9 (6), 805-822.
- UNITED NATIONS (1985), *Estimates and projections of urban, rural and city populations, 1950-2025: the 1982 assessment*, United Nations, New York.
- VANCE JR. J. E. (1971), *Land assignment in the precapitalist, capitalist and postcapitalist city*, Economic geography 47(2), 101-120.
- WILCZYNSKI W. J., WILCZYNSKI P. L. (2011), *Population of American cities: 1950-2009*, Bulletin of Geography. Socio-economic Series 16, 153-172.
- WOO M., GULDMANN J.-M. (2011), *Impacts of urban containment policies on the spatial structure of US metropolitan areas*, Urban Studies 48 (16), 3511-3536.
- XU L. (2011), *Inter-metropolitan migration of the newly landed immigrants in Canada: 1991-1996 and 1996-2001*, GeoJournal 76 (5), 501-524.
- YANG J., FRENCH S., HOLT J., ZHANG X. (2012), *Measuring the structure of US metropolitan areas, 1970-2000*, Journal of the American Planning Association 78 (2), 197-209.
- YEATES M. (1990), *The North American City*, Harper and Row, New York.
- ZHANG X.-H., SUN T. (2011), *Urban space production: Urbanization of Wujiaochang area in Jiangwan Town of Shanghai in 1900-1949*, Scientia Geographica Sinica 31 (10), 1181-1188.

Initial submission: 14.03.2014
Revised submission: 10.12.2014
Final acceptance: 15.12.2014

Correspondence: 23 Zahid Khalil, Baku State University, Baku, Azerbaijan

Email: vusat.afandiyev@mail.ru