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Urbanization and industrialization in Uzbekistan: challenges, problems and prospects

Tashkent - 2009

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Summary

Relevance of this study is determined by existing two long-term trends that will set up prospects for the development of Uzbekistan. Firstly, this is a demographic population growth, and secondly, increasing shortage of water and land resources.

According to the forecasts, by 2025 rural population will be estimated at 22,2 mln. people, and given the existing size of agricultural lands and increase of production rate, the number of employed in agriculture will fall down from current 3 mln people to 2 mln people. For the sake of social and political stability, there is a need to find solutions for efficient absorption of work force that is coined in the rural area.

To our mind, only industrial and innovative development and rapid urbanization, that is part of it, are able to respond effectively to the existing challenges. Therefore, the task is to shape a long term strategy for industrial and innovative development and relevant State policy for rapid urbanization of the nation. This analytical note illustrates preliminary vision of the issues and prospects of urbanization in long-term and short-term period.

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Abbreviation

APR	Asia-Pacific Region
CA	Central Asia
CER	Center for Economic Research
CIS	Commonwealth of Independent States
FDI	Foreign Direct Investments
GDP	Gross Domestic Product
GRP	Gross Regional Product
HEPS	Hydro Electric Power Station
MLSPU	Ministry of Labor and Social Protection of Uzbekistan
NGMK	Navoi Mining
PPP	Purchasing Power Parity
RAS	Russian Academy of Sciences
RF	Russian Federation
UN	United Nations
UNDP	United Nations Development Program
UN - Habitat	The United Nations Human Settlements Programme
US	Urban Settlement
USA	United States of America
USSR	Union of Soviet Socialistic Republics

Introduction

A Evaluation of the main outcomes of economic, political and social development of Uzbekistan within the period of time after gaining independence shows that the country has resolved main transition issues: new statehood was created, the system of the governance was shaped, intensive structural economic reorganization was carried out, foundations of market economy and civil society were set up. Currently Uzbekistan is confronted with the task to insure sustainable economic growth.

Evaluation of the long-term prospects of the development of Uzbekistan shows that there are two long-term trends that will determine prospects of Uzbekistan development. Firstly, this is demographic population growth, and secondly, this is the escalating shortage of water and land resources.

According to the forecasts, by 2025 rural population will constitute 22.2 mln people, given the existing size of agricultural lands and increase of production rate, the number of employed in agriculture will fall down from current 3 mln people to 2 mln people. In other words, the process of labor force growth in the rural area will proceed and in the medium-term prospects Uzbekistan is facing the challenge of growing number of unemployed rural labor force (additionally about 7 mln people by 2025), that may result in certain deterioration of rural family livelihood and income generation. This all threatens stability of long-term social and economic development.

To our mind only industrial and innovative development and rapid urbanization being a part of it, are able to respond effectively to the existing challenges.

Currently there is a need to elaborate a long-term strategy of industrial and innovative development and a State policy for rapid urbanization of the country that would be integrated into it. Here, a particular difficulty in elaboration and implementation of industrialization and urbanization policy stems from the fact that the Government of Uzbekistan has to, in contrast to many developed countries, implement these two strategies simultaneously. However, international experience (China, Malaysia, and others) proves that implementation of rapid urbanization and industrialization may succeed, provided that a specific state policy was developed and steadily implemented.

The goal of this analytical note is to produce recommendations on development of the medium-term State strategy of rapid industrialization and innovative development and urbanization in Uzbekistan.

Objective of this research include:

1. Evaluation of international experience of industrial and innovative development and urbanization.
2. Long term demographic population forecasts (до 2025 и 2050 гг.).
3. Evaluation of regional development in Uzbekistan and stratification of the regions based on the methodology for the regions competitiveness assessment.
4. Evaluation of existing problems and urban planning in Uzbekistan.
5. Development of recommendations on major direction of the State industrialization and urbanization policy.

This research was sourced by extensive amount of analytical data on regional development, urbanization and industrialization that was collected by domestic and foreign experts. In the processes of statistic analysis, State Committee of Statistics data and statistics provided by international organizations was used.

Uzbekistan is one of those CIS countries where population will continuously grow up to 2050 and will probably constitute 32,672 mln to 50,919 mln

Section 1. Major Long-term Trends and Challenges to Social and Economic Development of the Republic of Uzbekistan

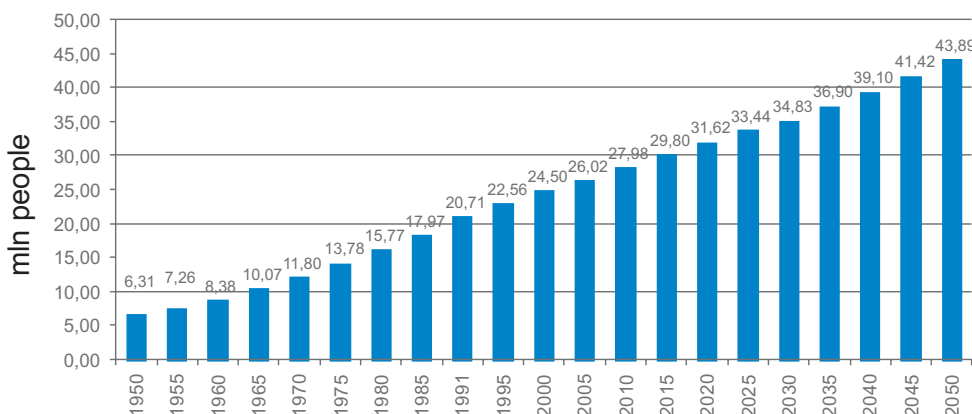
Considering medium and long-term dynamics Uzbekistan follows two long-lasting trends that pose completely new challenges to sustainable social and economic development of the country, those that, with the current mainstream of the State social and economic policy being unchanged, are able to produce serious negative consequences within the next 10-15 years.

1.1. Trend 1 – Intensive population growth

According to the forecasts of the Center of Demographics and Human Ecology¹, Uzbekistan is one of those CIS countries where population will continuously grow up to 2050 and will probably constitute 32,672 mln. to 50,919 mln. people². Similar population figures are indicated in the forecasts developed by the UN population experts: 33,355 mln people by 2025 and 40,565 mln people by 2050³. World Bank report “From Red towards Grey” reveals the following figures: “By 2025 population of Uzbekistan will increase by 1.3 mln people compared to 2007”⁴. Foreign demographic statistical data confirms estimates of the national experts.

According to their forecasts, under otherwise equal conditions (i.e. unless political decisions are taken to impact the size of the population and/or natural disasters, armed conflicts etc. take place), population of the country is expected to be 28.5-29.8 mln people⁵. According to the forecasts produced by the CER experts the population of Uzbekistan will constitute

Figure 1. Size of the population of Uzbekistan in 1950-2050, mln people



Source: Calculations by authors

¹ CER forecasts are based on the analysis of the main demographic process interaction - birth rate, mortality and migration see <http://www.demoscope.ru/center.html>. see Appendix 1.

² Besides Uzbekistan, this group includes Kirgizstan, Tadjikistan and Turkmenistan. see. Demoscop Weekly 69-70, 3-16 June 2002, <http://demoscope.ru/weekly/2002/069/tema04.php>

³ see. http://agrointernet.org/new_page_0.11.htm

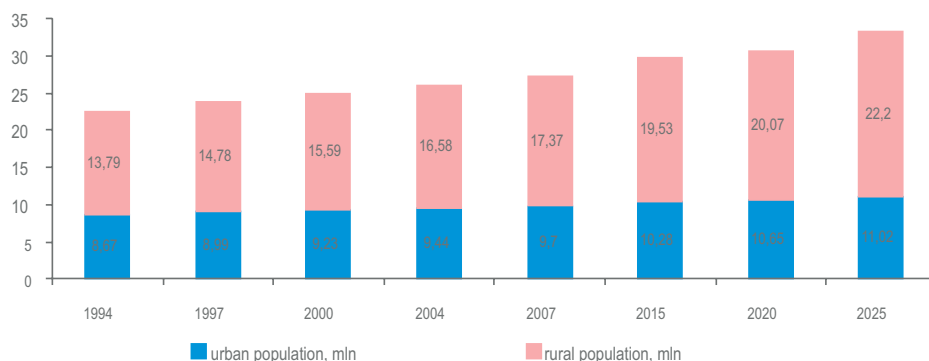
⁴ see. <http://www.un.org/> and Demoscope/Weekly 297-298, 20 August-2 September 2007., <http://demoscope.ru/weekly/2007/0297/panorm01.php#1>

⁵ Population forecasts for the Republic of Uzbekistan. Authors: V. Anoshkin, Z. Davidova, M. Ibragimov, R. Ibragimov. Tashkent. CER, 2008.

29.3 ~ 33.4 mln people by 2025 and about 43.9 mln people by 2050 (figure 1) ⁶.

In case the current ratio of rural and urban population is preserved in 2025, the total population of Uzbekistan being 33.22 mln people, the rural population will constitute 22.2 mln people while urban population will count for 11.02 mln people.

Figure 2. Size of the urban and rural population in 1994-2025, mln people



Source: Calculations by national experts based on statistics by Goskomstat RUZ

1.2. Trend 2 – inevitable escalation of fresh water and land resources deficiency

Annual water consumption rate in Uzbekistan constitutes at average 70-71 bln m³. In the recent years due to the reduction of the total amount of water resources and also due to the fact that some countries located in the upper parts of Sirdarya and Amudarya started using water reservoirs for power production rather than for irrigation, Uzbekistan receives annually about 55.07 bln m³ of water that is equivalent to 79% of the original water supply.

Apart from this the climate changes that are taking place in the region result in precipitation decrease. For instance, the flowing capacity of the Toktogul hydro power station decreased by 25-30% and currently Toktogul HPS is gradually falling to the level of the death volume when it will be able neither to pass water nor to produce electricity⁷. According to UN data in the event of further negative climate changes, by 2040 the volume of annual flow in Kyrgyzstan will be 19 km³, instead of current 55 km³. The same situation is found in Tajikistan⁸.

In 2025, the total population of Uzbekistan being 33.22 mln people, the rural population will constitute 22.2 mln people while urban population will count for 11.02 mln people

⁶ It should be noted that these figures are very close to the population size of Uzbekistan in 2025 that was projected by experts from UN and the Center of Demographics and Human Ecology under the Institute of Economic Forecasting of Russian Academy of Science, however they are lower than the forecasts of the World Bank experts. Projections of the World Bank with regard to the population size in the Republic of Uzbekistan by 2025 are exceeded unless the existing negative migration surplus rate is replaced by a positive one and/or further political decisions are made to rise the birthrate. Naturally, projections for such a long period can not be absolutely accurate because by 2025 and 2050 the interaction between birthrate, death rate and migration trends may change, however the basic trend is illustrated quite clearly.

⁷ The Head of the international public fund "Institute for the Study of Water Use and Water Power Resources of the Central Asia" Ernest Karybekov.

⁸ If, back to 1961 annual flow, that was formed in Tadjikistan, was 57,1 km³, then in 1990 it became 53,6 km³. Average annual decrease accounted for 0,11 km³. The worst decrease was found in the Zeravshan, Vaksh, Pyandj, Kizilsu basins that lost some 7% of their flows. If the forecasts about the global average temperature increase by 1.9 Co in the following 10 years is confirmed, then these rivers flow will fall by another 7-8% due to the glaciers melting. River feeding arrangement and hydrological regime will alter. By 2050 runoff is expected to shift by 25-30 days, and for the glacier and snow fed rivers the shift will be up to 50 days. The runoff peak is expected to be in January. In this case, currently functioning water use systems must be revised completely.

Water limits established for Uzbekistan are not secured in the long-term prospective. In the event that irrigated farming remains a priority within the frameworks of agro-industrial development, shortage of water supply will aggravate that eventually deter development of agriculture and affect rural population income

Apart from the objective factors including climate and weather conditions, there is another factor that exerts escalating pressure on Uzbekistan; that is an ambition of Kyrgyzstan and Tajikistan to possess more control over the Sirdarya and the Amudarya water flows⁹.

Considering all said above, Uzbekistan cannot be secured in receiving the established water limits. Obviously, that solution of trans-boundary water problems under the international law inevitably implies lower water limits for Uzbekistan¹⁰.

Uzbek agriculture consumes 53524,2 mln. m³ of water that accounts for 91,3% of total amount of water consumed, industry takes 2508,2 mln. m³ that is 4,3%, while population uses 2583,8 mln m³ or 4,4%¹¹. In the event that irrigated farming remains a priority within the framework of agro-industrial development, shortage of water supply will aggravate that will eventually deter development of agriculture and affect rural population income.

In addition, Uzbekistan is confronted with the scarcity of land resources, that is behind the deficiency of agricultural lands. Currently, there are 8.2 people per each ha. of irrigated land in Uzbekistan, that is, globally, one of the highest indices. Population growth rate exceeds irrigated lands expansion pace. As a result, in the last 25 years, share of irrigated field per person shrank from 0,22 ha to 0,12 ha.

Therefore, in the mid-term and long-term, Uzbekistan will experience more exacerbating demographic influence that implies continuous national population growth (particularly in the rural area), that is worsened by the scarcity of agricultural land resource as well as escalating shortage of water.

1.3. Challenges that are linked to the agro-development limitations

These trends make Uzbekistan face certain challenges that limit the potential of agricultural development and threaten stability of social and economical development in the long-term perspective. I.e. demographic pressing and scarcity of water and land resources result in the excessive workforce in agriculture (and this trend will be aggravated). Apart from this income (and livelihood) of the rural population is lower than that of urban population.

The trends of demographic pressing and scarcity of water and land resources result in the excessive workforce in agriculture, and this trend will be aggravated

⁹ Besides, if construction of Pyandj Hydro Power Stations and, especially Dashtidjum Hydro Power Station commences then, in the "upper" countries will be joined by Afghanistan as well. In prospects, Afghanistan may demand to increase its water share for the social and economic development of the north of the country. This will impact the flow regime of the Pyandj and the Amudarya.

¹⁰ By 2025, given the current demographic growth and water consumption rate remain unchanged, water demand in Uzbekistan is estimated at 72,4 km³, i.e. by 25% higher than current rate of water intake. (According to the Global Environmental Fund project and World Bank, Project «Management of water resources and environment in the Aral Sea basin» (WEMP)).

¹¹ Figures from the Ministry of agriculture and water resources of the Republic of Uzbekistan, 2006.

Based on the estimates by 2025 the rural population will constitute 22.2 mln people, and, given the current size of agricultural land does not change and labor productivity increases, the number of employed in agriculture will be 2 mln instead of current 3 mln people. That is, the workforce growth in the rural area will continue and in the mid-term prospective Uzbekistan may face the challenge of a growing number of unemployed labor force in the rural area (another some 7 mln people by 2025).

The implication of this trend means that in the medium-term perspective under otherwise equal conditions the social environment will deteriorate, that is the share of poor population will grow due to the reduction of rural population income and absence of prospects for its rise because of the low qualification of rural people that confides their job opportunities in other sectors of economy.

The trends of demographic pressing and scarcity of water and land resources result in the excessive workforce in agriculture, and this trend will be aggravated

To address these challenges the Government of Uzbekistan implemented agricultural reforms. The governmental agricultural policy took two stages. At the first stage in 90-s the emphasis in agriculture was placed on shirkat farms that largely anticipated conservation of the labor-intensive agriculture that resulted in a lower productivity and consequently low incomes in agriculture.

Starting from 2001 the Government strategy was focused on elimination of shirkat farms and development of private farms. This policy enabled a slight but stable improvement of agricultural productivity. Private farms have proven their economic efficiency compared to shirkat production. However, one of the implications of the mass private “farmerization” of agriculture in the medium-term perspective will include a lower employment in agricultural production because, due to the productivity improvement and consequently income rise, the farmers will enhance their technologies and equipment. That is, agriculture where private farms prevail is not able to consume excessive work resources of the rural area.

To resolve the issue of the excessive labor resources in the rural area, the State Program of rural development is implemented now, that includes incentives to start-up small industrial enterprises in the rural area to process agricultural products, cattle breeding development on farm, outworking expansion, service sector improvement etc.

Box 1. Rural and urban population incomes

Uzbekistan confirms the difference of rural and urban population incomes. For instance in 2001 the World Bank conducted a household survey in Uzbekistan that determined the poverty level in the country. The poverty level in 2001 was 27.5%*. According to ADB studies these figures slightly decreased by 2005 and constituted 25.8%. Significant improvement was achieved in urban area where the poverty level decrease from 22% in 2001 to 18% in 2005, however in the rural area the poverty level virtually remained unchanged. At the same time there is a great differentiation of poor population in different provinces. The major reason for the poverty is the fact that the majority of population lives in the rural area and that the wages in the agricultural sector are quite low. Thus, over 60% of population live in the rural area that comprises about 70% of all poor people. 30.2% of families headed by people working in the agricultural sector are recognized as poor compared with 18.6% of families whose heads work in industry.

* Poverty level – is the share of population that lives below the poverty line based on the consumption of 2100 calories a day.

Source: Yu.Abduganiyeva, Sh.Marni, Presentation on Livelihood Improvement Strategy for 2008-2010, May 20-24 2007, Tashkent

The global experience shows that small-scale industrial production in the rural area can not be a “driving force” of economic growth

Box 2. Urbanization effects

There is a straightforward statistical correlation: most of the countries where income is over 20000 USD per capita have 60% urbanization rate. Most of the countries with income under 10000 USD per capita are urbanized less than by 50 %. Urbanization facilitates intensive economic growth because productivity in the city is higher and grows faster than in the rural area.

Also there is a correlation between “urbanized territories” and standards of living. For instance, in cities the income level is, as a rule, higher than in the rural area. For example, in China average income of an urban family is three times higher than that of a rural family. Besides, compared to the rural area cities may have many other factors that improve the life quality. For instance, state programs can be better applied in cities thanks to implementation of economy of scale while providing transportation, communication, water supply, sanitation and garbage collection services.

Besides, urbanization is an important precondition for the transition to the industrial and innovative development. Advantages of cities as centers of intensive industrial development in contrast to the rural settlements comes from the fact that they provide opportunities for concentration of enterprises from various sectors that in turn improves their productivity. There are also other ways to improve productivity. For instance, thanks to extensive opportunities for division of labor (due to a higher population density and diversity of opportunities for industrial employment) intrasectoral specialization for specific activities becomes more probable.

Thus, there is a need for a clear understanding of the role cities play in the process of a country's modernization. International experience proves that practically all key elements of the industrial and innovative economy are concentrated in urban areas. Capital and governmental structures are also concentrated here. Overall, modern economy is placed in cities. All other territories are, in fact, nothing more than auxiliary and supplying systems.

In more details see Appendix 3

However, international experience proves that small-scale industrial production in the rural area cannot be a “driving force” of economic growth. In particular, international experience shows that 80% of economic growth is generated in cities and therefore, in order to ensure stable economic growth, there is a need to move towards industrial and innovative development. In this context, to our mind, the policy to encourage establishment of small enterprises in rural areas should be implemented in tandem with urbanization encouragement, because it is urbanization that is the most critical precondition for the transfer to industrial and innovative development.

Frequently, global science puts urbanization¹² in opposition to the support of rural development. But, in our view, this is not a very constructive position. A wise state policy is capable to ensure rural development, development of rural infrastructure and simultaneously to stimulate the

development of cities being the major centers of industrial development. Naturally, the issue of priorities in distribution of constantly limited state budget funds becomes more critical.

80% of economic development is generated in cities and therefore to ensure stable economic growth there is a need to move towards industrial and innovative development and encourage urbanization

In contrast to countries that possess extensive land resources, Uzbekistan is in scarce of them and cannot afford to neglect serious investments into the support and development of rural infrastructure. In the settings of Uzbekistan the policy for the support, development and improvement of the countryside, establishment of small-scale processing enterprises brings about a lot of advantage (employment and income growth). However, there is a major constrain – development of small-scale enterprises in the rural area is not able to provide a breakthrough in industrial and innovative development. This only can be done in cities.

¹² Urbanization (lat. urbanus – related to the city, urbs - city) – is the city growing, increase of the urban population share, share of urban people against the total population – in the country, region, world, enhancement of city's role in all aspects of the community life as well as the dissemination of urban life style in rural areas.

Section 2. Urbanization in Uzbekistan: current status and problems

2.1. Factors that limit migration to cities

The problem of unemployment in the rural area is partially resolved by the population itself by means of temporary labor migration of rural people to cities. According to estimates of MLSP of the Republic Uzbekistan the number of labor migrants rose from 44 thousand people in 2001 to over 330 thousand people in 2006. 30% of Uzbek population is willing to travel to work, and this is a very high migration rate. Annually in 15%-40% of the total number of families at least one family member becomes a labor migrant¹³. Here, the absolute majority of domestic migrants try to move to Tashkent and other cities that form the big Tashkent agglomeration – Almalyk, Angren, Akhangaran, Yangiyul, Chirchik. Currently, these cities already show a significant increase in the number of domestic migrants¹⁴. However, these migration is deterred by a number of factors.

2.1.1. Administrative measures that limit migration of rural population

One of the factors that deter migration is administrative limitations. But they are not capable to stop domestic migration, while due to official registration constrains most of these unemployed fail to find a permanent job. Job opportunities for these migrants are confined by retail trade, construction works and public catering. It is very unlikely that these people will find a permanent job and adequate revenues. 87% of domestic migrants have never been registered, while 79% never acquired a temporary right for residence. Migrants do not tend to make formal job contracts because in this case they will have to pay a registration fee and taxes. Therefore they prefer to work illegally that hampers effective statistical account of urban population. Here, the major constrain that prevents a reliable statistical account, is the inferiority of the registration system in cities that directly impedes the process of legal urban population growth and ensuring the required quality of life, and aggravates sanitary-and-epidemiologic and criminogenic situation in cities.

Apart from this internal migration as a result of a higher rate of the population growth and intensification of agricultural production in Uzbekistan, is an objective and a long-term process. Administrative measures of migration deterrence used to decrease the uncontrolled city growth, first of all in

According to estimates of MLSP of the Republic Uzbekistan the number of labor migrants rose from 44 thousand people in 2001 to over 330 thousand people in 2006

Internal migration as a result of a higher rate of the population growth and intensification of agricultural production in Uzbekistan, is an objective and a long-term process and administrative measures are not able to stop the internal migration flow

¹³ "Labor migration in the Republic of Uzbekistan: social, legal and gender aspects", UNDP, 2008; <http://www.undp.uz/en/publications/publication.php?id=153>

¹⁴ For instance, experts state that in Almalik town the number of officially registered people is 130,000 people while the actual town population accounts for 250,000-280,000 people. – Impact of agricultural reformation on the livelihood of the nation: political and social aspects (demographics and migration) UNDP, Tashkent, Policy Brief, №1, 2005. p. 6

Tashkent, are relevant as one of the directions of governmental policy of urbanization, but in our view this policy should be comprehensive and supplemented by measures intended to maintain industrial development of large cities – regional centers.

2.1.2. De-industrialization and absence of employment opportunities in cities

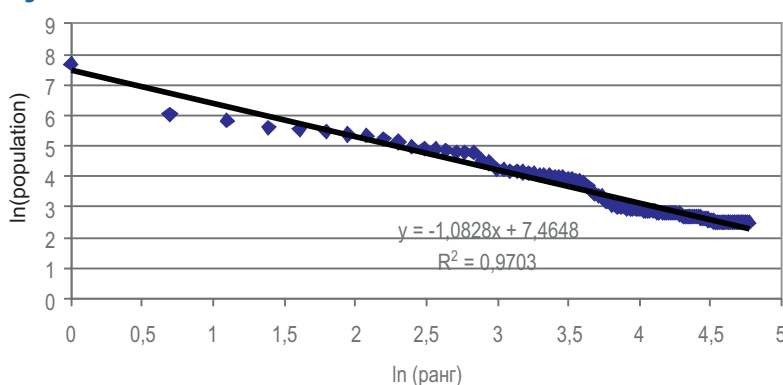
While evaluating the city growth it is important to stress that due to the difficulties of the transition period most of small and medium cities showed a reduction of the number of industrial enterprises, which in their turn were the major consumers of workforce.

A particularly difficult situation is found in two numerous categories of cities – district centers, deterioration of which resulted from the collapse of agriculture in the given districts, and monofunctional industrial centers (coal production, mining, etc.). These cities that were, in many cases, founded around a single enterprise, lack room for economic maneuver. The set back in production, and moreover a city-forming enterprises shut down, deprives employees of their salary, and the city budget – of tax proceeds.

About 13% of the republic citizens or 38% of the total urban population live in small and medium (up to 70 thousand) towns. The majority of urban-type settlements virtually lack urban environment and they more and more remind “big villages”. Small towns and urban-type settlements are intensively losing urban functions and develop rural traits. The total number of cities and urban-type settlements has not increased, moreover, it has decreased. There are no new urban-type settlements that could become “candidates for cities”. Thus, in 1994 there were 234 cities and urban-type settlements in Uzbekistan, and in 2008 there were only 233¹⁵.

The majority of urban-type settlements virtually lack urban environment and they more and more remind “big villages”. Small towns and urban-type settlements are intensively losing urban functions and develop rural traits. The total number of cities and urban-type settlements has not increased but on the contrary has decreased

Figure 3. Distribution of the cities based on the size and rank in Uzbekistan



Source: Calculations by authors

Besides, this country lacks large industrial cities, that play the most critical role in modernization and act as main migration pulling centers.

There are very few cities like that in Uzbekistan and size wise, they are not “mature” enough. This is backed up by the city size measurements done by the Zipf’s rule¹⁶. In particular, cities in Uzbekistan do not conform with the rule «rank-size», where distribution of the cities based on their size logarithms (population size) and ranks (size wise ordinal number) build up a straight line. Under the Zipf’s rule, besides

Tashkent Uzbekistan should have another city of 1mln. population and two

¹⁵ According to the State Committee of Statistics of the Republic of Uzbekistan

¹⁶ Methodology and estimates see Appendix 2

more where 500 000 to 800 000 people live. Lack of large agglomerations poses some constraints to spatial development, the country has not enough strong centers that arrange territory and to accelerate modernization.

There are a lot of towns where 12 000 people to 30 000 people live. Therefore, Uzbekistan is a country of one mega-polis, numerous small towns and no large cities where population size would be 500 000 people and over.

This urban development has a series of consequences for the medium-term development of Uzbekistan and for economic policy focused on stimulation of economic growth. Urbanization policy must encourage emergence of 2-3 urban agglomerations, that would lighten demographic burden pressure on Tashkent City and ensure more uniform regional development, when these cities become "growing points" and backbone sites of a city body.

Thereby, urbanization in Uzbekistan is not completed yet. New trends of transition period has slowed down this process. Still, Uzbekistan experiences a lack of cities including big ones that would become leaders of the regional policy development. Eventually, cities may stop being centers/foci for development, absorbing the excess of rural workforce that ultimately may impede the progress and condensation of Uzbekistan.

Urbanization policy must encourage emergence of 2-3 urban agglomerations, that would lighten demographic pressure on Tashkent City and ensure more uniform regional development, when these cities become "growing points" and backbone sites of a city body

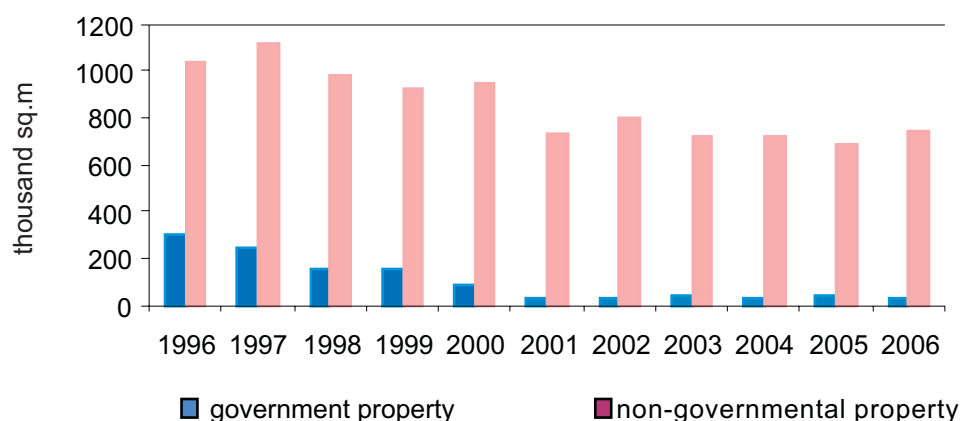
2.1.3. Current conditions of urban infrastructure

Current conditions of urban social and engineering infrastructure greatly constrain implementation of the quick urbanization in Uzbekistan.

First of all, affordable housing for urban population remains a critical issue in city development.

Figure 4 shows that during 1996 to 2006 housing construction in the cities was steadily falling down. Likewise there has been a significant decrease in housing built by the government.

Figure 4. Residential housing construction in the cities 1996-2006



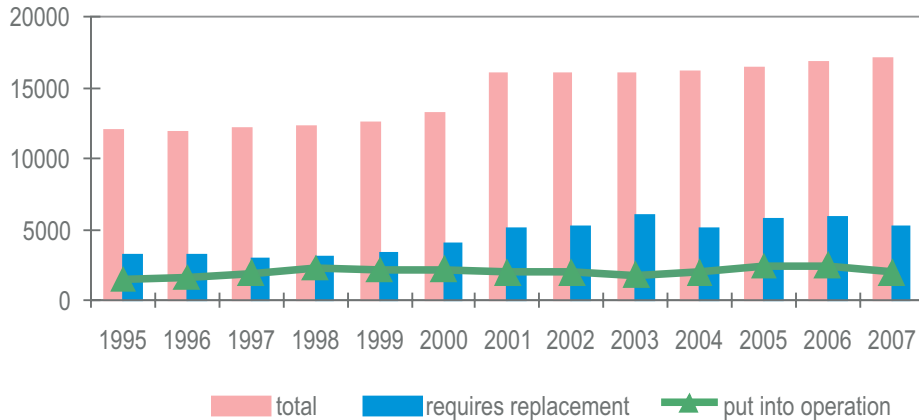
Источник: На основе данных Госкомстата РУз

Existing residential housing construction situation including housing prices and slow mortgage development requires that the Government take quite different policy in providing affordable housing, primarily for young families.

Individual housing construction cannot be only solution to housing issues especially in cities. New solutions must be found to ensure effective progress

of urbanization in the country. Social housing can be one of them, where funds will be raised both from the National and Local Governments.

Figure 5. Street water supply network developments across cities and urban settlement , km

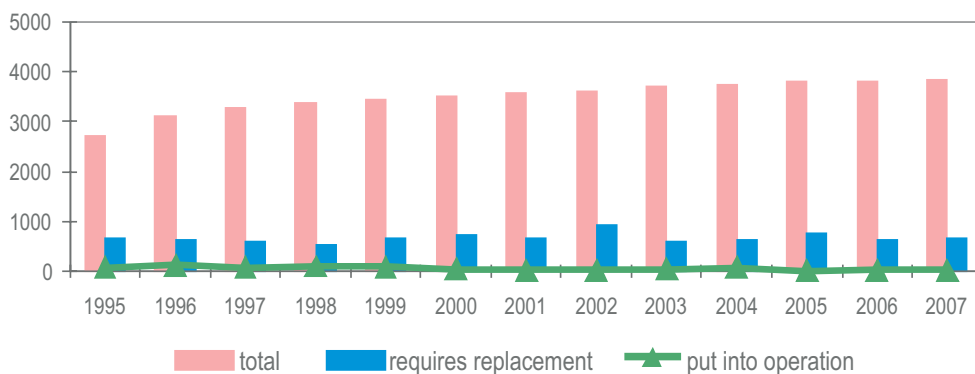


Source: State Committee of statistics of the Republic of Uzbekistan

network commissioning increased in absolute figures (in 1995 1471 km was built while 1448 km in 2007), in percentage , this ration is negative 47% in 1995 r versus 38% in 2007.

Street sewage network in cities and urban settlements expanded from from 2719 km in 1995 gody to 3834 km in 2007. Deterioration rate remains unchanged; 20% out of total length. At the same time, building new sewage networks decreases both in absolutie figures and in percentage.

Figure 6. Street sewage network developments across cities and urban settlement , km



Source: State Committee of statistics of the Republic of Uzbekistan

The highest concern is about heating and steam networks across cities and urban settlements. During 1996 to 2007 total length of heating networks in the cities and urban settlements shrank by 15%, while deterioration of this networks rose from 5% against the total network length in 1996 to 15% in 2007. However, despite unfavorable situation, less heating network was built to that time. For example, in 1996 21.9 km of heating network was built in cities and urban settlements, while in 2006 only 0.8 km.

Secondly, deterioration of the city engineering infrastructure that deters industrial development and establishing new enterprises is a fair constrain in city growing.

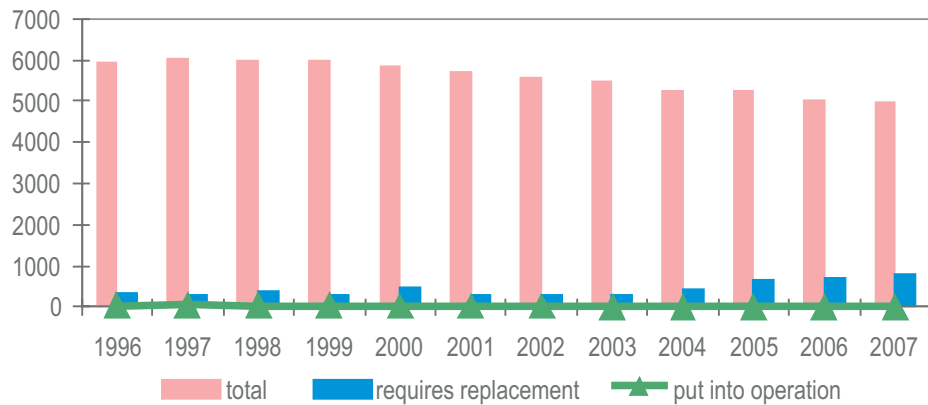
Assessment of water supply networks in cities and urban settlement done 1995-2007, indicates that in that time period deterioration rate of water supply network raised form 27% in 1995 to 35% in 2006. Although annual

network commissioning increased in absolute figures and in percentage. In particular, length of street sewage network across cities and urban settlements built in 1996 accounts for 20% of the size of the networks requiring replacement, but in 2007 this figure was only 3%.

The deterioration of urban infrastructure resulted from a lengthy serious underfunding of the residential and utility systems.

For example, as a result of the state policy of prioritized rural infrastructure development, 2417 km of water supply lines were put into operation across the country in 2006, 2251 km of them were built in the rural area and only 166 km – in cities; also, totally 1825 km of gas networks were put into operation, out of them 1691 km were built in the rural area, and 134 km – in cities.

Figure 7. Heating and steam systems development across cities and urban-like settlements, km



Source: State committee of statistics of the Republic of Uzbekistan

Under the rapid urbanization policy the priority should be gradually moved from rural to urban infrastructure financing.

Underfunding is aggravated by the absence of a structured approach towards a complex urban development. Currently, to improve the infrastructure urban authorities use traditional, but often inefficient project, administrative and engineering solutions, such as repair of deteriorated networks, targeted budgetary provisions for local fixing of the most pressing problems. However, this policy is not efficient because it dissipates already scanty financial and administrative resources.

Bringing the infrastructure in line with the current level of urban development requires significant financial inputs that are beyond the capacity of the local authorities, both at the city and regional level. This happens because the capacity of city authorities to replenish city budget is constrained.

The development of urban infrastructure is an important condition for insuring a rapid economic growth based on attraction of foreign investments, because the low quality of urban infrastructure, in particular, absence of a reliable and full-fledged access to water, gas and power supply discourages potential investors.

Under the rapid urbanization policy the priority should be gradually moved from rural to urban infrastructure financing, because the absence of a reliable and full-fledged access to water, gas and power supply discourages potential investors

2.2. No comprehensive vision towards urbanization policy in Uzbekistan

The main reason behind the weakness of cities as industrial centers, as well as of inferiority of the city infrastructure stems from the absence of complex urbanization policy in Uzbekistan.

The existing system of population distribution and spatial arrangement of Uzbekistan is based on the system created in previous years and in many respects perpetuates a raw material production focus (agriculture, and minerals production) that existed before.

Currently, in Uzbekistan cities are not acknowledged as development elements, they frequently drop out of the scope of national reforms. The Governmental territorial policy is confined with regional policy. The local government reformation prioritized the interests of districts and rural settlements rather than those of cities. Mainly, the economic policy in the regions focuses on rural and agro sector problems.

At the soviet period in Uzbekistan cities were mainly formed when a large industrial enterprise was established and a city grew around it¹⁷. But the collapse of the USSR radically changed the operation conditions of these city-forming enterprises and many of them had to decrease the number of employees. In other words this city-forming factor was lost. Isolated attempts made in the transition period to establish large enterprises and to form small towns around them (Shurtan, Karaulbazar) cannot become a mainstream trend in urbanization policy.

Realization of a focused urbanization strategy in the country implies the improvement of the existing city management and city development planning systems. The current system of city planning has definite shortcomings.

For the time being city planning is not structured and lacks an integrated system of city planning documentation that includes: i) policies/programs of social and economical development of regions (provinces); ii) policies/programs of social and economical development of cities for 20-25 years ahead; iii) master plans of city development.

In 2008 the resolution of the Cabinet of Ministers of the Republic of Uzbekistan approved master plans of Bukhara, Navoi, Termez, Namangan, Nukus, and Zarafshan cities¹⁸. However, the approved master plans represent only engineering and design solutions, and were prepared without regard to strategic long-term city development prospects. Master plans should be based on elaborated strategies/programs of urban social and economic development and determine long-term prospects of city development as

¹⁷ Contemporary Urban Studies in Russian call this phenomena "slobodizatsiya", that is when a city is a kind of "sloboda" (settlement) adjacent to some large enterprise.

¹⁸ "On approval of Master-Plan of Bukhara City" Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 19 dated to 22.01.2007.; "On approval of the Master-Plan of Navoi City" Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 24 dated to 02.02.2007 r.; "On approval of the Master-Plan of Termez city up to 2025 goda" Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 49 dated to 14.03.2007.; "On approval of the Master-Plan of Namangan City" Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 50 dated to 15.03.2007 On approval of Master-Plan of Nukus City" Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 250 dated to 06.12.2007.; «On approval of the Master-Plan of Zarafshan City" Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 243 dated to 11.11.2008.

For the time being city planning is not structured and lacks an integrated system of city planning documentation that includes:

i) policies/programs of social and economical development of regions (provinces);

ii) policies/programs of social and economical development of cities for 20-25 years ahead;

iii) master plans of city

well as driving forces (enterprises, businesses) that in future will be the basis for the growth of city economy.

In particular for such cities as Zarafshan it is important to identify prospects for the city development in case of depletion of mineral resources, exploitation and processing of which serve for the time being as the basis for the city economy. The strategy must identify ways of city economy diversification, new sectors and enterprises that would insure future city development, as well as the analysis of demographic processes in the context of labor force supply in a mid- and long-term time period. At the same time it is important to realize that Zarafshan city perspective is very much dependent on the perspective of NGMK enterprise and the Kizilkum region as a whole.

Without devising a long-term urban development strategy integrated into the perspective of development of region as a whole, efforts on city master plan elaboration seem to be futile. Inefficiency of making city master plans ignoring a long-term city development strategy is clearly seen in case of the approved by the Cabinet of Ministers master plan of Navoi city, which does not stipulate the establishment of a free industrial and economic zone in Navoi city, that requires serious changes to be made in the approved master plan. Therefore algorithm – “elaboration of a long-term strategy/program of region development – elaboration of a city master plan” seems to be the more reasonable and less costly.

The master plan of a city must reflect the city development strategy and be based on the targeted function of this territory. Therefore development priorities must be clearly reflected in the design terms of reference and be defined, first of all, by strategic documentation.

Elaboration of a long-term strategy/program of social and economic development of a region/city makes it possible, while preparing the master plan, to answer the following key questions:

- How much work force is required to implement the existing projects and execute functions dedicated for these territories.
- Which settlement type (the most appropriate population size of the cities, number of storeys, requirements towards engineering infrastructure, and etc.) would be the best in various climatic regions and functional zones.
 - What would be the mechanism of city population size optimization.
 - What mechanisms will be used to settle the population and to sort out economic resources of the cities.

At the moment “Master Plan for the Population Settlement within the territory of the Republic Uzbekistan”¹⁹ is developed and submitted to the Cabinet of Ministers for it contains a detailed analysis of the territories and

¹⁹ Master diagram of population settlement in the Republic of Uzbekistan 2002-2005 based on the Urban Construction Code (page 21) and in pursuance of the Governmental Decree 13.11.2002 dated to №676-Φ. Prime Contractor shall be “Gosarchitektstroy” (State Architect and Construction Office), and the Prime Designer – “Uzshakharsozlick LITI” Institute.

Master plans represent only engineering and design solutions. Master plans should be based on elaborated strategies of urban social and economic development and determine long-term prospects of city development as well as driving forces that in future will be the basis for the growth of city economy

There is no single research organization that would study the problems regional development and urbanization in Uzbekistan and prepare recommendations for the government

environment for population settlement, a demographic forecast, a spatial analysis of population settlement pattern, existing engineering and social infrastructure, as well as recommendations proposed to enforce the long term State Population Settlement Policy. This commitment may serve as a basis for developing the State Urbanization Policy. However, we believe, that the figures received while preparing this document should be used for devising regional and city long-term social and economic strategies/ programs.

Another problem that hampers the efficiency of the regional development planning and processes stems from the fact that there is no single research organization that would study the problems regional development and urbanization in Uzbekistan and prepare recommendations for the government. Currently the regional development issues are to some extent covered in the research conducted by the Center of Economic Studies, the Institute of Macroeconomic Analysis and Forecast; issues of city planning and city construction – in “Uzshakharsozlik LITI”. However, city development is closely linked with social and economical development programs/strategies and requires a concentration of the intellectual potential of specialists in the given sectors within a single research and analytical organization.

Section 3. Main urbanization policy directions: international experience and key avenues for Uzbekistan

3.1. Urbanization is a manageable process

Urbanization is a complex and multifaceted process. If targeted and comprehensive State policy does not exist then, apart from positive urbanization outcomes, it may cause environmental deterioration, poverty and crime rate increase in cities.

Experience gained while enforcing State urbanization policies illustrates both efficient and inefficient state urbanization policy. A policy that has been pursued by some Asian and African countries in the last 30 years is a good example of an inefficient policy. Major outcome of this policy was creation of the phenomenon named “fake urbanization” that implies rapid urban population growth non being followed by the sufficient increase of jobs, megapolisation meaning that a lot of rural migrant settle around a big megapolis, very often a capital, that bring about slums, excessive pressure upon the megapolis, unemployment growth and a crime rate increase. The difference between the fake urbanization from a genuine one is that urban functions which characterize global urbanization process do not emerge. Rural population is just “pushed” into the cities from overpopulated agrarian districts. Besides, urban population share greatly prevails the share of urban population employed in both manufacturing and non-manufacturing sector. After coming in cities, rural people stay unemployed, while insufficient housing generates city suburbs of poor amenities and hygiene.

This state urbanization policy is incomplete and confined with intensification of administrative measures on preclusion/suppression of migration of rural population to the cities. Implementation of an active antimigration policy without a prior planning of job creation measures in the cities and first of all in industry, makes the government face a problem of an increased population density and formation of slums.

Thus, without implementation of a industrialization policy, as well as job creation in the industrial and services sectors in the cities, restrictive measures do not produce a beneficial effect. Likewise, urbanization detached from industrialization leads to a “fake urbanization”.

There is not only a negative but also a positive experience of a focused state policy of urbanization. For instance, in the 60-s Hungary elaborated and implemented an integral policy of urban development that was directed to decrease ultraconcentration of economical and political processes in

Absence of the state urbanization policy enables the risk of creation of “fake urbanization” that implies rapid urban population growth non being followed by the sufficient increase of jobs, megapolisation, that results in excessive pressure on megapolice infrastructure, unemployment and crime rate increase

Implementation urbanization policy without a prior planning of job creation measures in the cities and first of all in industry, makes the government face a problem of an increased population density and unemployment, and decrease of standards of living

The problem is not urbanization as such, but its chaotic and uncontrolled development. That is why urbanization must be the subject matter of the state policy

Budapest and, particularly, stipulated the formation of backbone cities system, that would “counterbalance” Budapest: Mishkolts, Dyer, Debretsen, Seged, to direct there the streams of rural migrants. These cities became the basis for “growing point”-cities. A similar policy is currently implemented in Latvia, Estonia, and Lithuania (see Appendix 5 – State Urbanization Policy in France).

The policy of the China government, that is being implemented since late 70-s, can serve as an example of an integrated, focused and long-term planning of urbanization. The government of PRC has identified a task of transformation of the rural China into an “urban country” with a 60% level of urbanization by 2020. Putting emphasis to industrial development, the government of China takes coordinated measures to encourage the migration of rural people to the cities. The major elements of the state urbanization policy in China are: i) a long-term planning of industrialization policy trends, stages, and effects; ii) the analysis of long-term demographic trends in the urban and rural areas, estimation of demographic capacity of cities under the conditions of rapid industrialization, estimation of the demand for workforce in the cities; iii) elaboration of a complex program encouraging the flow of the workforce from the rural area to the cities, that stipulates a number of institutional and organizational measures to train and retrain rural people in new industrial professions.

The major directions of urbanization are: a) development of large cities and formation of three new major megapolises: in Chang Jiang delta, Chjutszyan delta, and Beijing-Bohai metropolitan region; b) at the same time to limit the flow of migrant workforce from the rural area to large cities, a decision was made to encourage the development of small towns and urban-type settlements, as well as to found 10,000 new small towns, that would become the centers of rural industrialization. Many of them will be created in the areas that currently are the main sources of migration. It is assumed that by 2020 200-300 mln people will live in small towns and settlements, and the rest 500-600 mln people – in 200-300 cities with a population size of 2-3 mln people each²⁰.

Thereby, it may be said, that the problem is not urbanization as such, but its chaotic and uncontrolled development. That is why urbanization must be the subject matter of the state policy. One of main features of the state urbanization policy is its dualistic nature combining elements of spontaneous market development with planning, with the state playing the essential role. The form of participation may vary from implementation of state rural and urban programs to empowerment of city administration to form local budgets.

Here, it is important to take into consideration national specifics, the level of country development as well as the goals of national development it prioritizes. Urbanization becomes the main condition of development if its

²⁰ http://www.archipelag.ru/agenda/povestka/evolution/irkutsk/b3_china/

goal is a sustainable economic growth and social development based on industrial and innovation progress.

Urbanization tools. International experience of a successful urbanization shows that the major city-forming factor is the elaboration and implementation of a “growing point”-cities concept.

“Growing point”-cities are the large or perspective centers of sustainable development (on the basis of large and medium cities, having an advantageous or strategic location).

The goal of the state policy must be of creation of a new structure of industrial enterprises placement, that would be effective in the context of maintenance costs of power, utilities, transportation infrastructures, and favorable for residence and business development. The implementation of this approach implies a creation of advanced growth points so that the development of medium and small cities could optimize the system of settlement, considerably raise the quality of social services and engineering infrastructures due to their concentration in the development points; development of infrastructurally linked provincial territories, and also launching the projects aimed at improvement of the population mobility and housing building to ensure movement of population into development centers.

Inefficient population settlement, lack of resources in the points of actual growth, inefficient transportation services are the factors hampering the country development. That is why the tasks of urbanization policy are:

(i) identification of “growing points”, and places for management centers (transport logistics, finance);

(ii) coordination of policies on education, labor market formation, and internal and external migration, including training of rural people in professions that are in demand in the cities and will help future townspeople to settle and adapt;

(iii) coordination of territorial planning tools, etc. In general this change means identification of an actual space frame of the country development, including advance growth zones; planning the directions of advance development of these zones and their connections;

elaboration and implementation of projects of advance development that is able to involve so called disadvantaged territories. This can be defined as elaboration of a single scheme of a spatial country development in combination with the tools of business activity, growth of social capital and state interference in the process of space restructuring.

The major city-forming factor is the elaboration and implementation of a “growing point”-cities concept. “Growing point”-cities are the large or perspective centers of sustainable development on the basis of large and medium cities, having an advantageous or strategic location

Box 3. Development of new approaches in the Russian regional policy

One of the outcomes of the latest research and deliverables in the regional policy is the Concept of the Social and Economic Development Strategy of the Russian federation devised by the Ministry for Regional Development. Based on this document budget resources will be first of all provided for the so called “backbone territories” (“the driving forces for the growth”), while disadvantaged regions will receive funds to meet the social commitments to Russian citizens. At the same time “champion-regions” will have to literally undertake the development of the neighboring territories, that are so far unable own economic growth. This model is supposed to replace the current system that implies having a few donor regions and a huge mass of recipients, that resulted from “leveling” policy that has been in place for decades. The concept unveils the need to transfer from the “leveling” policy to the focused development. Financial, administrative, management, human, and other resources are assumed to be pooled together in “the backbone regions” (“poles”) from where innovative efforts will be replicated in other territories.

International experience shows that urbanization policy must be linked with industrial policy. And within the framework of developing “growing points” certain industrial policy tools must be utilized such as creation of Free economic Zones and technoparks, funding infrastructure using the state and private business resources

Transition from resource orientation of the economy to industrial and innovative development inevitably requires change of the approaches to the spacial organization of the country’s territory through accelerated urbanization and targeted urban development

Besides, as the international experience shows, the urbanization policy should be connected to industrial policy. While forming the growing points it is necessary to use the following tools of industrial policy:

1. Programs for the creation of free economic industrial zones and special economic zones, that would facilitate the reorientation of the industrial policy from inefficient “random” methods of small and private business development support to specific selective measures.
2. Elaboration of a special program to create and strengthen the technoparks system within local Universities and research institutes, that altogether can ensure a core of the national innovative economy. A critical aspect here is to provide specialized services by the government that would include implementation of large-scale industrial and innovative projects (that are capable to pool together institutions, business community, financial resources, human resources, material resources, land resources), that implies a large-scale infrastructural development of a certain region.
3. Establishment of financing mechanisms to utilize state budget resources to fund manufacturing infrastructure that is required for implementation of investment projects in the real sector of economy. Social investment support measures in the “growing points” that include tax breaks, investment subsidies, grace landing.

Urbanization models. Globally, various opinions about the selection of urbanization models exist. Some researches believe that priority must be given to the large cities driven urbanization. However, with urbanization advancing all problems that are common for the cities with over half a million population exacerbate. Clearly large cities growth must be limited at a certain point. The second option implies a special support for the development of medium and particularly small towns.

3.2. Urbanization Policy in Uzbekistan – Key Directions

Modernization of the social, political and economic domains as well as formation of efficient economic system and steady dynamic social structure is the long-term goal of the socio-economic and political development of Uzbekistan. These goals should be addressed mainly through ensuring high and sustainable economic growth indicators.

Implementation of the industrial and innovative development strategy and interrelated strategy of the country’s urbanization are the key avenues of the government policy ensuring accomplishment of these goals.

Transition from resource orientation of the country’s economy to the industrial and innovative development inevitably requires the change of the approaches to the spacial organization of the country’s territory – through accelerated urbanization and targeted urban development.

Mature policy on creation of conditions for the urban development as the

points of industrial development supposed to be the centres of gravity and trigger for the rural region development has to become the key goal of urbanization strategy in Uzbekistan.

Integrated state policy has to include the following directions:

1. Formation and implementation of the cities' concept – “poles of growth”.
2. Optimization of the urban development planning system.
3. Improvement of the system of the migration process administrative control.
4. Institutional and organizational support of formation and implementation of the state urbanization policy.

3.2.1. Industrial and innovative development through “growth poles”

Formation of the strategy of industrial and innovative development under the transforming economy conditions and significant impact of the government regulation on the market processes has to reflect the course to sustainable development and upsurge in the industrial output.

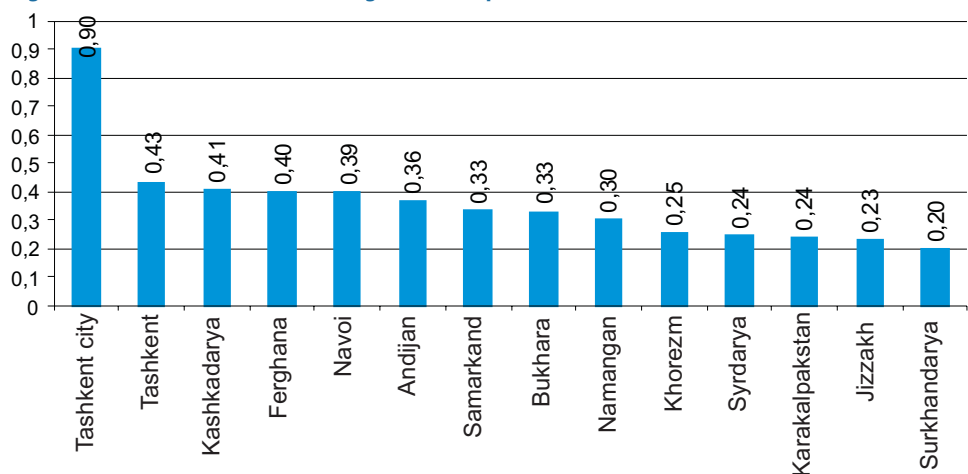
Implementation of the strategy of industrial and innovative development is capable to ensure the qualitative economic growth. From our point of view, Uzbekistan's industrial development and associated policy of accelerated urbanization shall be supported by the leading regions, when these regions become the locomotives of entire country's development. Therefore, at present it would be necessary to both identify the leading regions and form “growth poles” system²¹.

The work group members accomplished the analysis of the regional development processes and prepared the consolidated index of the Uzbekistan regions development under the framework of this research.

Consolidated index of the regions development²² shows the existence of the absolute leader in the country – Tashkent city. The group of regions with the average development index includes Tashkent, Kashkadarya, Fergana, Navoi, Andijan,

In the frame of the new urbanization policy the specific focus has to be made to the active development of the industrial potential of the regions-leaders

Figure 8. Consolidated index of the regions development



Источник: На основе данных Госкомстата РУз

²¹ The cities – innovative and administrative centres concentrating economic activity in the country and serving as the changing source play the role of the “growth poles”

²² See Appendix 4 for the details on methodology and the outputs of the regions' stratification

It is necessary to specify the types of the cities to be considered as the “growing points”. For such groups specification it is necessary to identify the criteria. The criteria may include: the level of intellectual potential development, extent of the urban environment maturity, availability of the modern information and transportation infrastructure, existence and condition of the scientific organizations and higher educational institutions, as well as the enterprises and organizations with scientific and production specialization

Samarkand and Bukhara oblasts. Specific focus under the framework of the new urbanization policy and industrial and innovative development has to be made on the active development of industrial capacity of these regions and their transformation in the leading regions of the industrial and innovative development.

Differences in the socio-economic development of the oblasts, existence or lack of the large industrial enterprises in the regions are the key factors of the poverty differentiation by region. Thus, Navoi, Tashkent and Bukhara oblasts achieved the high level of the socio-economic development through existence of the industrial enterprises.

High level of Tashkent city development is associated with the high economic activity of domestic and foreign business. Poor level of economic development in Karakalpakstan and Khorezm oblast can be broadly explained by the severe natural and climatic conditions, for Surkhandarya oblast – its remoteness from the key transport routes of the country, for Fergana Valley – land resource scarcity. Due to the above reasons, these regions have been less attractive for investments, which is hindering their economic development²³.

Therefore, based upon the outputs of the analysis of the regions' competitiveness Tashkent city, Tashkent, Kashkadarya, Fergana, Navoi and Andijan oblasts can become the centres of industrial and innovative development in Uzbekistan.

Considering continuation of existing general trends of the perspective resettlement it is important to specify the types (groups) of the cities to be considered as the “growing points”, “locomotives” of industrial and innovative development of the country's economy. For such groups specification it is necessary to identify the qualitative and quantitative criteria to be met by the cities claiming the role of leaders of industrial and innovative development of the country's economy. Such criteria might include: the level of intellectual potential development, the extent of the urban environment maturity, availability of the modern information and transportation infrastructure, existence and condition of the scientific organizations and higher education institutions, as well as the enterprises and organizations with scientific and production specialization.

It appears, that we can identify the following three groups of cities:

- Tashkent – as a centre of industrial and innovative development

²³ When analyzing the level of the regional differentiation in the country, it is necessary to note that the endeavours of the Government of Uzbekistan as well as the measures on ensuring the macro-economic stability, institutional and structural transformations have prevented the expansive differentiation growth of the country's territorial development. According to the gross regional product (GRP), its level in Uzbekistan (4.2 times in 2003), for instance, is significantly lower than in Russia (up to 30 times) or in neighboring Kazakhstan (up to 12 times). By comparison, the gap between the maximal and minimal levels of the regions' development in the countries of the European Union does not exceed 2.5 - 3 times. At the same time, the implemented measures have not been able to ensure significant differentiation reduction of the territorial development of Uzbekistan.

and associated small and medium towns composing the large Tashkent agglomeration;

- Large administrative oblast centres with sufficient scientific, innovative and industrial, transportation and logistical potential. At that, the oblast centres of the leading regions by the competitiveness rating will be the most likely candidates to the “growth poles”;
- mid-sized monofunctional industrial towns – the centers of the sectoral systems (Angren, Almalyk, Akhangaran, Zarafshan, Uchkuduk, Mubarek, Asaka)²⁴ with the mineral raw materials, industrial, scientific and innovative potential and the perspective of formation the innovative development zones, hi-tech parks and technopolises.

Specific attention has to be paid to the Tashkent city development. Currently, the global competition for foreign investments is getting more tough, and the competitors are presented by both countries and individual regions/cities. Urban authorities are developing and implementing strategic and aggressive controlling methods. At present, in Uzbekistan only Tashkent city has the potential required for the successful competition in the fight for transformation into the transportation, logistical, innovative and technological centre of the regional magnitude.

On this basis, it is necessary to develop the strategy and the vision of Tashkent city socio-economic development to be based on the maximal exploitation of the geographic location, and on enhancement of the city’s role as the regional linking centre among APR and Western Europe, North and South of the Euro-Asian continent and its industrial and innovative potential. The implementation of the project proposed by consortium of the Korean companies on formation of industrial and innovative technopolise “Uz City”²⁵ in Sergeli district, Tashkent city, may become one of the important steps in this direction. This project is focused on the following aspects: creation of the favourable conditions for the development of the hi-tech technological, innovative processes, development of the scientific, educational, cultural and tourist potential, production, transportation, transit and social infrastructure of Tashkent city and improvement of its international competitiveness through development of the existing business infrastructure, including construction of the global level business centre and the modern tourist and entertaining system; establishment of the centre of the cutting-edge technologies development and introduction on the basis of the technopolise, and commencement of affiliates of the leading foreign educational facilities in the hi-tech field.

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²⁴ The fact that all oblasts border on the neighbouring CA states is one of the key peculiarities of the territorial location of Uzbekistan. This creates both the possibilities and the certain threat. From the geo-economic point of view, the oblasts of the Southern Kyrgyzstan are definitely oriented and will be further oriented on Uzbekistan, and formation of the points of industrial and innovative urban development of the oblast centres of Fergana Valley; Andijan and Fergana can make them the points of attraction for the business and population of these oblasts of Kyrgyzstan. Establishment of the transportation and logistical centre can form the pole of attraction for the neighbouring regions of Tajikistan and Afghanistan.

²⁵ The details on the “Industrial and innovative technopolise “Uz City” you can find in the Annex 6.

Support of the towns' development is the individual direction of the industrial and innovative development and urbanization in the country.

Small town development is becoming the key element in the national implementation of the strategy of formation of the large commodity production on the basis of the medium and large farms and intensive development of the small processing enterprises oriented to the agricultural raw material processing in the rural areas.

This anticipates not only restoration but the qualitative beneficence of small towns in establishment of the territorial agro-industrial sectors. In this context, rather wide scope of the activities on economic service providing to the attracted agricultural areas can become the most important function of the small towns, namely: establishment of the new form of the sale (storage) of the agricultural output, economically feasible directions of its processing, promotion of the state-of-the-art technology and the other means of production for the customer on acceptable for him/her terms, providing of the specialized services on production arrangement and maintenance of agricultural production to the large and small farms, best practices promotion, staff capacity building, financial services and the credit availability ensuring, arrangement of the marketing and legal service.

In addition, understanding of the small towns' role in the process of the planned industrial development of the agricultural production will enable ensuring the new quality of the small towns' function accomplishment as the organizational and political centers of domestic development with significant progress of entire system of the cultural and public service of the population. Thereby, the small town acquires the firm and continuously renewable function for its sustainable development through the comprehensive assistance to the rural area.

Analyzed directions deal with development of the prevalent part of the small towns; and most of them more or less are associated with the agriculture and attracted regions population servicing. Implementation of the mentioned directions could become the foundation for the innovative activity both in the small towns and on the attracted agricultural territories; and the past positively proven forms of the consumer's cooperation could be restored on the new economic and organizational legal basis.

Therefore, urbanization policy implementation in Uzbekistan has to be oriented on the model of the integrated development of the small, medium and large cities. The large cities – “the growing points” will enable ensuring the best possibilities for the development of the capital intensive and the technologically intensive industries and service sector. The medium and small towns have to serve as the space for development of the labour-consuming production ensuring the rural emigrants the jobs and the permanent residence.

Urbanization policy implementation in Uzbekistan has to be focused on the model of integrated development of the small, medium and large cities. The large cities – “the growing points” will enable ensuring the best possibilities for the development of the capital intensive and the technologically intensive industries and service sector. The medium and small towns have to serve as the space for development of the labour-consuming production ensuring the rural emigrants the jobs and the permanent residence

Moreover, urbanization through development of the small and medium towns with existing growth of population will enable, on the one hand, some mitigation of excessive rural population growth, and on the other hand, slowing down migration pressing of the rural citizens to the large cities.

3.2.2. Urban development planning system optimization

The optimization of the urban development control on the basis of the agreed system of the strategic planning documents has to be ensured when developing and implementing of the comprehensive government urbanization policy. Developed strategies/programs of the socio-economic development of the regions and cities for 20 – 25 year perspective have to be the basis for such system. The master plan of any city/town has to be the representation of the urban development strategy and rely upon the designation of this territory. Therefore, the system of development priorities needs to be clearly specified in the design terms of reference and identified, first of all, with the strategic documents. At that, transition has to be made to the design of the urban master plans in the digital format and all documents and layouts need to be consolidated in one program. According to the specialists' estimate, the cost of such software product is equal to 10% of the cost of the master plan design. First of all, this technology enables the adequate vision of the situation in the city; secondly, the urban authority has the permanent access to these documents. Moreover, there is the possibility of the on-line changes and coordination with designers. Ultimately, the electronic reference book can be developed for entire city's territory enabling any citizen, potential builder and company to browse any territory, understand plans of its development in the 10 – 20 years coming, to see existing or planned infrastructures; and this will allow accomplishing the adequate assessment of the possibilities for the construction designs, etc.

Existing situation in the residential development requires adoption of the state program of the social housing construction. This anticipates the construction of the multi-storied residential buildings for account of the budget funds and their lease to those with the small income, first of all, for the young families. The principle is that the housing is not subject to transfer to the ownership and has to be the subject of the long-lasting lease.

Besides, the individual and private construction needs support, first of all, through the mortgage credit which along with the certain shortcomings in terms of the infrastructure appreciation has significant advantages in terms of the construction pace.

3.2.3. Improvement of migration administrative regulation system

The simplified system of the permanent registration (of the temporal registration with right of employment) has to be approbated and introduced in the country's cities for the internal migrants – citizens of Uzbekistan. This system will simplify their search of the permanent work in the city and

The optimization of the urban development control on the basis of the agreed system of the strategic planning documents has to be ensured when developing and implementing of the comprehensive government urbanization policy. Developed strategies/programs of the socio-economic development of the regions and cities for 20 – 25 year perspective have to be the basis for such system

The simplified system of the permanent registration of the permanent registration for the internal migrants – citizens of Uzbekistan has to be approved and introduced in the country's cities (apart from Tashkent city)

provide the chance to gradually become the urban citizens. This approach can become one of the principles for development and implementation of the long-term state urbanization strategy focused on the pushing out the excess labour power from agriculture, which is necessary for the sustainable socio-economic development of the country.

Introduction of the simplified registration system will enable the new citizens to legalize their status and get access to the bank crediting services; this, in its turn, will facilitate the development of the private entrepreneurship and mortgage construction.

3.2.4. Institutional and organizational arrangement and implementation of the comprehensive state urbanization policy

The problems of the regional development, regional planning, urbanization and municipal economy management require the serious work on coordination of accomplished endeavours in this direction, the task-oriented work on urbanistic science formation as the multidisciplinary science. In this context, the Centre of the regional policy and urbanization has to be established under the Cabinet of Ministers.

The Centre of the regional policy and urbanization has to be established under the Cabinet of Ministers; the standing mechanism of analysis, forecasting and planning of the processes of the regional development, urbanization and demography will be established on this Centre's basis

The standing mechanism of analysis, forecasting and planning of the processes of the regional development, urbanization and demography, identification of the key trends of the cities' development, both of the large, medium and small ones, identification of the migration flows, etc. can be established on this Centre's basis.

Establishment of the Centre of the regional policy and urbanization will enable implementing the task-oriented policy on attraction the funds of international organizations, in particular, UN-Habitat, World Bank, etc. for the implementation of integrated research projects on formulation of the nationwide urban development strategy, development and implementation of the development strategies for the individual cities, personnel and institutional enhancement of the city administration. Moreover, this Centre could initiate the implementation of the donor-funded projects in such fields as improvement of the municipal water supply and sewerage system, district heating, and public transportation²⁶.

²⁶ Thus, for the last years, the World Bank allocated USD 633 million for implementation of the projects on the urban infrastructure improvement in Russia.

Conclusions

The rural population growth along with the scarcity of the water and land resources indicates that potential of extensive growth of agriculture due to introduction of the new lands in agricultural turnover has been exhausted. And the further agricultural development is possible only in case of introduction of intensive growth inducers and groundbreaking technologies.

Therefore, intensification of agricultural production will lead to the absence of demand of significant part of the rural labour force, and, given the goals of ensuring of the long-term and mid-term social and political stability, the search of the ways of efficient absorption of the rural labour force will be required.

Uzbekistan inevitably will face the necessity of the urban development and accelerated urbanization, and only the cardinal transition to the industrial and innovative development and formation of comprehensive government urbanization policy will enable absorption of excess rural labour force.

Currently, there is a necessity in development of the comprehensive government urbanization policy which will include the following directions:

1. Formation of the concept of the cities – “growth poles”.
2. Optimization of the planning system of the urban development.
3. Improvement of the system of the migration processes administrative control.
4. Institutional and organizational support of development and implementation of the comprehensive government urbanization policy.

Formation of the concept of the cities – “growth poles” and support of the regions-leaders which are to become the development locomotives of entire country have to be the key focus of the government urbanization policy.

The state urbanization policy has to ensure the optimization of existing planning system of the urban development on the basis of the coordinated system of the strategic planning documents. Developed strategies/programs of the socio-economic development of the regions and cities for 20 – 25 year perspective have to be the basis for such system.

Moreover, existing situation in the field of housing construction require adoption of the state program of social housing construction. This envisages construction of multi-storey residential buildings funded by government budget and their lease to those with the small income, first of all, for the young families.

The simplified system of the permanent registration (of the temporal registration with right of employment) has to be approbated and introduced in the country's cities (apart from Tashkent city) for the internal migrants – citizens of Uzbekistan. This system will simplify their search of the permanent work in the city and provide the chance to gradually become the urban citizens. This approach can become one of the principles for development and implementation of the long-term state urbanization strategy focused on the pushing out the excess labour force from agriculture, which is necessary for the sustainable socio-economic development of the country.

It seems feasible to implement the measures on institutional and organizational support of formation of the comprehensive government urbanization policy. Specifically, the Centre of the regional policy and urbanization has to be established under the Cabinet of Ministers; the standing mechanism of analysis, forecasting and planning of the processes of the regional development, urbanization and demography, identification of the key trends of the cities' development, both of the large, medium and small ones, identification of the migration flows, etc. can be established on the basis of the Centre.

Appendix 1. Population size forecasts in the Republic of Uzbekistan

The estimate of the population size was based on the data of the population size for the period 1950-2008 by t times.

The model with the best statistic characteristics of the regression equation of the population size of the Republic of Uzbekistan by t time is given in the Table 1 (sampling size = 59, annual data, from 1950 to 2008).

Dependent variable	Population size N at the beginning of the year, th. people	t^3	-0.080623 (0.002955)
Independent variable	Regression coefficient	R^2	0.999919
Constant	6334.718 (32.542)	$F(R^2)$	107269.6
t	139.0209 (5.505)	DW	1.0912
t^2	8.313287 (0.24266)	Sampling size	$n=59$ (1950:2008)
Notes: 1) Standard errors of the regression coefficients evaluation are given in parenthesis. R^2 – determination coefficient; $F(R^2)$ the value of the Fisher's statistics for the determination coefficient; DW - Durbin – Watson coefficient.			

Table 2. Dynamics of the population size of the Republic of Uzbekistan: N – population, thousand people; $NP1$ – calculated value of the population size

Year	t	N	$NP1$	Year	t	N	$NP1$	Year	t	N	$NP1$
1950	0	6314	5845	1975	25	13778	13872	2001	51	24900	24709
1951	1	6461	6209	1976	26	14184	14236	2002	52	25115,8	25073
1952	2	6634	6573	1977	27	14595	14599	2003	53	25427,9	25437
1953	3	6827	6936	1978	28	14977	14963	2004	54	25707,4	25800
1954	4	7035	7300	1979	29	15391	15327	2005	55	26021,3	26164
1955	5	7256	7664	1980	30	15765	15690	2006	56	26328	26528
1956	6	7488	6962	1981	31	16158	16054	2007	57	26658,8	26891
1957	7	7732	7325	1982	32	16591	16418	2008	58	27000	27255
1958	8	7991	7689	1983	33	17039	16782	2009	59		27619
1959	9	8119	8053	1984	34	17498	17145	2010	60		27983
1960	10	8375	8416	1985	35	17974	17509	2011	61		28346
1961	11	8665	8780	1986	36	18487	18737	2012	62		28710
1962	12	9000	9144	1987	37	19026	19101	2013	63		29074
1963	13	9400	9507	1989	39	19905	19828	2014	64		29437
1964	14	9818	9871	1990	40	20322	20192	2015	65		29801
1965	15	10068	10235	1991	41	20708	20556	2016	66		30165
1966	16	10399	10599	1992	42	21207	21436	2017	67		30528
1967	17	10715	10962	1993	43	21703	21800	2018	68		30892
1968	18	11068	11326	1994	44	22192	22163	2019	69		31256
1969	19	11451	11690	1995	45	22563	22527	2020	70		31620
1970	20	11799	12053	1996	46	23007	22891	2021	71		31983
1971	21	12147	12417	1997	47	23444	23254	2022	72		32347
1972	22	12562	12781	1998	48	23868	23618	2023	73		32711
1973	23	12950	13145	1999	49	24231	23982	2024	74		33074
1974	24	13361	13508	2000	50	24500	24346	2025	75		33438

Source: 1) Population size from 1950 to 2007 (at the beginning of the year): Population Statistics <http://www.populstat.info/>; Демоскоп Weekly. Through the eyes of the analysts <http://demoscope.ru/weekly> 2) Population size at the beginning of 2008 – Goscomstat of the Republic of Uzbekistan.

The population size of Uzbekistan from 1950 to 2008 grew from 6,314.0 to 27,000 thousand people (see the Table 2). Its increase discrete pace reduced from 2.33% in 1950 to 1.28% in 2007 (see Table 3).

The next estimate of the population size of Uzbekistan till 2015 was made based on the model and Table 1. The estimate outputs are given in the Table 2. According to the estimate, the Uzbekistan population will grow up to 28.5 – 29.8 million people by 2015. The population size estimate by 2015 has been made with the help of the model orbit and is given in the Table 3.

Table 3. Population size of the Republic of Uzbekistan for the period from 2002 to 2008 and its estimates calculated by the orbit (1)

<i>Years</i>	<i>N, thousand people</i>	<i>t</i>	<i>Esti- mate N, thousand people</i>	<i>Years</i>	<i>t</i>	<i>Estimate N, thousand people</i>	<i>Years</i>	<i>t</i>	<i>Estimate N, thousand people</i>
2002	25115,8	1	25189,7	2019	18	30664,1	2036	35	37328,2
2003	25427,9	2	25482,8	2020	19	31020,9	2037	36	37762,5
2004	25707,4	3	25779,3	2021	20	31381,8	2038	37	38201,8
2005	26021,3	4	26079,2	2022	21	31746,9	2039	38	38646,3
2006	26328	5	26382,7	2023	22	32116,3	2040	39	39096,0
2007	26658,8	6	26689,6	2024	23	32490,0	2041	40	39550,9
2008	27000	7	27000,2	2025	24	32868,0	2042	41	40011,1
2009		8	27314,3	2026	25	33250,4	2043	42	40476,6
2010		9	27632,1	2027	26	33637,3	2044	43	40947,5
2011		10	27953,7	2028	27	34028,7	2045	44	41424,0
2012		11	28278,9	2029	28	34424,6	2046	45	41905,9
2013		12	28607,9	2030	29	34825,1	2047	46	42393,5
2014		13	28940,8	2031	30	35230,3	2048	47	42886,8
2015		14	29277,5	2032	31	35640,3	2049	48	43385,8
2016		15	29618,2	2033	32	36054,9	2050	49	43890,6
2017		16	29962,8	2034	33	36474,4			
2018		17	30311,4	2035	34	36898,8			

Appendix 2. Classification of cities based on their size and rank according to Zipf's law

In all countries, classification of residential areas based on their size is very asymmetric, but this "shift" uncovers an amazing pattern. In most countries, rating cities by size is well characterized by Pareto distribution or a rule of retroactive force. This is clearly shown on the Figure, where a size logarithm is shown in comparison with their ranks (each biggest city is assigned a rank equal to one). On such graph, points are located along a straight line, by which the empirical Figure was named "A Rank Size Rule". Height and slope of the line correspond to parameters of Pareto distribution which differ from country to country. The height of the line increases depending on the size of economy (interception point with a Y-axis corresponds a logarithm of the largest city's size), while its slope usually designated as "alpha" usually amounts to -0.6 down to -1,5. If alpha equals -1, the rank size rule is called "Zipf's Law".

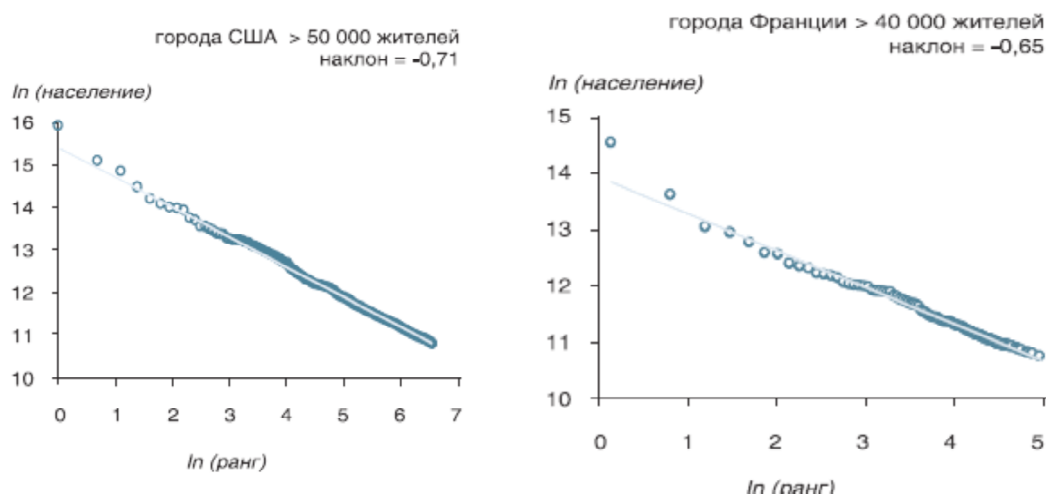
Rating cities by size in some countries virtually conforms to Zipf's law. This is a more general rule of ranks and sized that is a good basis for comparing distribution of cities by size in different countries.

Figure 1 shows examples of distributions. Rating cities by their size along X-axis (sizes are indicated on Y-axis) confirm the conclusion drawn in relation to "western" states, whose economies have been harmoniously developing for a long time in response to market forces, particularly: Zipf's law describes distribution of cities in these countries by rank and sizey.

Thus, Figure 1 demonstrates a trend observed in countries with developed market economy: one or two cities in the upper part of the Figure by their size differ from a curve that characterizes an assembly of other cities in the country. Often these include capitals of the countries.

It is no wonder that development of cities in transition economies also follows the rank size rule, since distribution of cities by size for a long time and in this regard similarity between countries with market economy and countries with transitional economies roots back to history (mainly, pre-socialistic period). The influence of centralized planning in transitional economies in Central and Southern Europe was short-lived, and none of them experiences a scale of urbanization induced by centralized planning as in the Soviet Union.

Figure 1. Distribution of population and ranks of cities in the USA and France

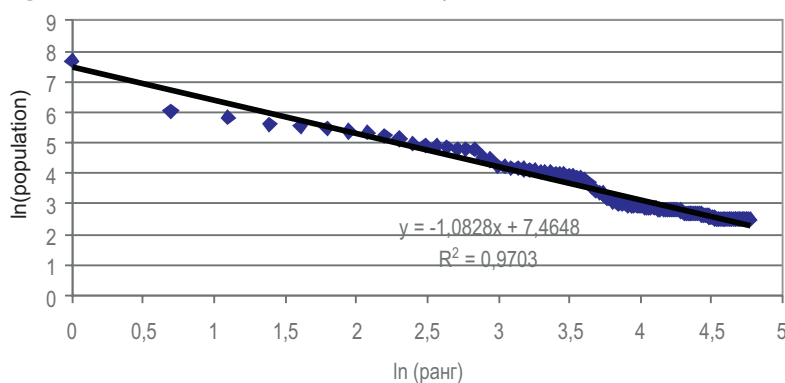


Applying the Rank Size Rule to Uzbekistan

During the research Zipf's Law was tested by using population data in cities of Uzbekistan in 1991, 2002 and 2006.

In order to assess the weight of tail area of distribution of all residential areas in Uzbekistan we will consider a regression of logarithms of city ranks on their size logarithm. Figure 2 shows distribution of the largest 44 residential areas in Uzbekistan in 2006. Cities are ranked by size, that is, by number of residents, while this distribution is shown on a logarithmic scale.

Figure 2. Distribution of Cities in Uzbekistan by Size and Rank



Source: Estimates of national experts

Logarithm regression parameters of corrected ranks for residential area size logarithms for distribution tail areas in 1991, 2002 and 2006 are shown in Tables 1, 2 and 3. 95% of confidence intervals of w coefficient are shown in Table 4.

Thus, according to Table 4, w coefficient with a significance value of (likelihood of type 1 error) 5% can be taken as 1 which agrees with Zipf's law of city size distribution. This means that distribution of cities in Uzbekistan largely correspond Zipf's law.

As show in Figure 2, Uzbekistan has one huge megapolis surpassing all other residential areas.

In addition, there are 3 large cities in Uzbekistan besides Tashkent (Namangan, Samarkand, and Andijan) with population of 350 to 450 thousand that are below the curve. Despite the fact that these cities are large, they were smaller by size than it was expected. In other words, big cities with population from 500 thousand to 1 million are nonexistent in Uzbekistan.

Table 1. Logarithm regression parameters for rank i for the 46 largest residential areas in Uzbekistan (with population no less than 20 thousand people) in 1991 by their population logarithm N_i : $\ln(i-1/2) = a - w \cdot \ln N_i$

Dependent variable	City Rank Logarithm $\ln(i-1/2)$
Independent variable	Coefficient of regression
Constant	7.129755
$\ln N_i$	-1.00512 (0.209582)
R^2	0.961449
$F(R^2)$	1097.352
Sample Size	$n=46$

Note: A standard regression coefficient w assessment error is shown in parenthesis. R^2 - coefficient of determination; $F(R^2)$ - Fischer's statistical value for the coefficient of determination.

Table 2. Logarithm regression parameters for rank i for the 44 largest residential areas in Uzbekistan (with population no less than 21 thousand people) in 2002 by their population logarithm N_i : $\ln(i-1/2) = a - w \cdot \ln N_i$

Dependent variable	City Rank Logarithm $\ln(i-1/2)$
Independent variable	Coefficient of regression
Constant	7.440864
$\ln N_i$	-1.045001 (0.222795)
R^2	0.948153
$F(R^2)$	768.0764
Sample Size	$n=44$

Note: A standard regression coefficient w assessment error is shown in parenthesis. R^2 - coefficient of determination; $F(R^2)$ - Fischer's statistical value for the coefficient of determination.

Table 3. Logarithm regression parameters for rank i for the 44 largest residential areas in Uzbekistan (with population no less than 23 thousand people) in 2002 by their population logarithm N_i : $\ln(i-1/2) = a - w \cdot \ln N_i$

Dependent variable	City Rank Logarithm $\ln(i-1/2)$
Independent variable	Coefficient of regression
Constant	7.515885
$\ln N_i$	-1.055391 (0.22501)
R^2	0.954834
$F(R^2)$	887.8933
Sample Size	$n=44$

Note: A standard regression coefficient w assessment error is shown in parenthesis. R^2 - coefficient of determination; $F(R^2)$ - Fischer's statistical value for the coefficient of determination.

Uzbekistan has a multitude of cities with population of 12-30 thousand. Thus, Uzbekistan is a country with a megapolis and a generous amount of small cities and lacks big cities with population of 500 thousand.

<i>Year</i>	<i>Estimation for coefficient w</i>	<i>Standard Estimation Error</i>	<i>95% confidence range for Coefficient w</i>
1991	-1.00512	0.209582	(-1.416; -0.594)
2002	-1.045001	0.222795	(-1.482; -0.608)
2006	-1.055391	0.22501	(-1.496; -0.614)

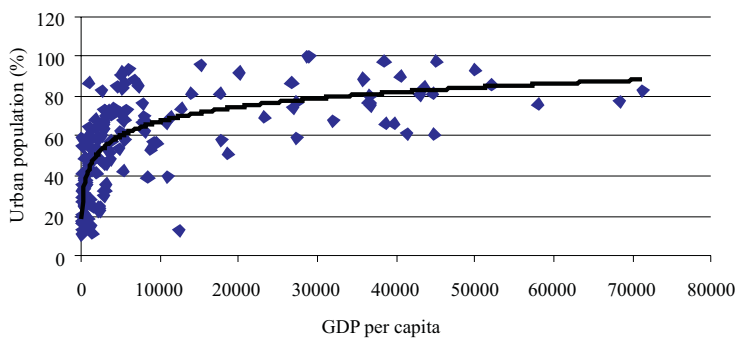
This development trend of cities has a number of implications for mid-term development of Uzbekistan and its economic policy designed to boost economic growth. The urbanization policy should aim to stimulate the process of creating 2-3 city agglomerates capable of bringing down demographic pressing on Tashkent city and ensure a more equitable regional development, when these large cities should act as growing points and backbones of city frameworks.

Appendix3. Urbanization Effects

Relation between Urbanization and Economic Growth

There is a direct statistical relation: most countries, where per capita income is above USD 20,000 are 60% urbanized. Most countries, where per capita income is less than USD 10,000 are less than 50 % urbanized. Urbanization promotes economic growth, since production increases is higher and grows faster in urban, rather than rural area.

Figure 1. Relation between Urbanization and Economic Growth, 2006



Source: World Bank Data (World Development Indicators), 165 countries

As early as in 2001 UN Habitat Program in the World's Cities Report quite clearly and reasonably) proved direct and positive correlation between urbanization level and economic and social growth rate.

Source: World Bank Data (World Development Indicators), 165 countries.

The poorest countries on the planet are characterized by the least degree of urbanizations, while more developed states are more urbanized. With some exceptions, this relation is already considered an axiom.

In 2002, average per capita GDP indicator in the poorest countries (by purchasing power parity - PPP) amounted to USD 1,307, while urbanization level was only at 26.1%. In developing countries, in the same year average per capita GDP amounted to USD 4,474, while urbanization level totaled 43.9%. Average urbanization level in developed countries was 77.3%, while per capita GDP was USD 23,000.

There is a relation between "level of urbanization in an area" and living standards. As a rule, income is higher in cities, than rural areas. For example, in China average household income is three times higher in urban areas, than in rural area. In addition, as compared to rural area, there may be more factors in urban areas that help increase quality of life. For example, government programs can be more effectively implemented in cities

owing to the effect of economy with simultaneous increased scope of services, transportation, water supply, sanitation and waste collection.

In addition, urbanization promotes development of rural areas. People who move to cities often remit money to their relatives living in rural areas. As a result of migration, labor resources decrease in rural area resulting in increased salaries.

Box 1. World Urbanization Tendencies

2008 represents a turning point in the complex and ongoing process. For the first time in history, in 2008, more than 50% people became urban and lives in cities. At current urbanization rates according to UN predictions, the share of urban dwellers may reach 60% of world population by 2030.

Over last 15 years, the highest rates of urbanization and most active economic growth was observed in the Asia-Pacific region. In 2006, GDP in Asia Pacific Region grew by 5.7%, whereas in 1990s this indicator was at 2.7%. Over these 16 years, urban population increased by 7.3%, average annual dynamics of this indicator in 2006 amounted to 2.3%. By comparison, over the last six years, population growth in megapolises in Europe and North America grew only by 0.4 and 1.4% annually.

Source: UN Economic and Social Commission for Asia Report

Relation of Urbanization and Industrial and Innovative Development

Within a country, urbanization is one of natural stages in transition from low productivity agriculture to higher productivity industrial production and services. Industrial development in the 20th century is focused primarily in big cities — urbanization sets ground for and promotes industrialization. Having reached a phase of post-industrial development, large cities retained the importance of centers for intensive political and industrial development, but also became a source of modern urbanization pattern.

Advantages of cities as centers of expedited industrial development as compared to rural regions open up opportunities for concentration of various industrial enterprises, thus, increasing their production capacity. There are also other ways to increase production. For example, owing to wider opportunities for division of labor (due to higher population density and diverse opportunities for job placement in production).

Companies located in cities can learn from experience of other enterprises working in the same industry and from their suppliers. In addition, they are located closer to market outlets for their product, whereby they are better able to changing demand. A combination of these factors as well as a relatively inexpensive transportation and proximity of buyers and supplies decreases commercial expenditures. Owing to the concentration of a large number of educated and creative people in a city become “incubators” of new ideas and technology, conducive to economic growth.

Besides, factors influencing on shaping of the city’s role as a focus of economic activity is quality of production environment, that is, a network of subcontractor organizations, scientific and educational environment, availability of fundamental and applied scientific laboratories, socio-cultural level of residence area in city and suburbs for the specialists. Factors in this group intensify a tendency for placing enterprises closer to cities and their importance is constantly growing.

Cities attract entrepreneurs and workers, while concentration of industries and services promotes growth of production.

Consequently, a complex specialized economic space, some elements of which act as infrastructure. Besides, the concentration effect is also intrinsic to government expenses and social welfare. Thus, city development is able to ensure optimization of government expenses on construction and maintenance of infrastructure. In case of concentration of population in cities, particularly, funds spent on building five health facilities in five rural settlements could be used to build one health facility to provide services to the same number of residents.

Box 2. Concentration of Industrial Hubs and Industrialization

A concept of local sets of industrial enterprises, developed in 1950s, – industrial hubs – allowing to achieve significant economic effect on capital investments, territorial and material and technical resources plays a significant role in purposeful shaping of socio-economic activity in cities. Contrast to simple territorial groupings, where economic effect is achieved by joint use of elements of city infrastructure, technologically related groupings the main benefit is gained through technological links between production units and ensuing increased cooperation and combination processes.

The analysis of industrial hub establishment practice allowed achieving significant economic effect on investment, material and technical, as well as energy resources. Opportunities for the hub savings by 9-10%, decreased mileage of automobile roads by 10-11%, railroads by 18-20%, decrease of buildings by 20-25% was ascertained. Considering the fact that industrial hubs have been predominantly formed from different industries, principles of industrial zoning were used in most cases. Specialization of established and developing industrial hubs and region on account of intensive development of primary (agglomerates) enterprises determining their production and economic function.

Therefore, clear recognition of the place of cities in the process of modernizing a country is essential. World practice shows that virtually all hubs of industrial and innovative economy are localized in urban areas. Points of capitalization and management structures are concentrated here as well. In general, modern economy is spatially located in cities. Other territories are nothing more than support and auxiliary systems.

Appendix 4. Stratification of Regions in Uzbekistan

Inequality in socioeconomic status of the regions is more or less intrinsic to all states regardless of their economic development.

An expedited transition from command and distribution economy to market relations resulted in a significant socioeconomic shocks, also due to adaptability of regions to unstable economic environment. Consequently, the regions in the country differ by their level of development.

Due to existing objective reasons, absolute elimination of inequality is impossible. However, excessive regional polarization aggravates economic and political situation in the country.

There is a need to determine their types to develop a differentiated policy of socioeconomic development and its successful adaptation to conditions of certain regions. Accordingly a working group of the project attempted to stratify regions in Uzbekistan based on a methodology to assess competitive ability of the regions. This work was designed as an analysis of achieved outcomes of regional development as well as identification of weak and development of strong competitive advantage of a certain region. Main indicators, by which a level regional development, include quality of life index, competitive ability index, and infrastructure development index.

A Method of Assessing Regional Competitive Ability

Assessment of regional competitive ability is one of the ways to evaluate regional development aimed at identification of tendencies and perspectives of economic growth in one region in comparison with others.

A method used for analysis was chosen, since it is the most indicative and allows choosing indicators depending on the goals of analysis.

Since this analysis aims to assess regional competitive ability to further determine measures to ensure sustainable development of the republic, a significant emphasis is placed on identification of infrastructure, investment, and other advantages in the region.

There is a way to rate the regions in the Republic of Uzbekistan using an index method. To determine comprising indices reflecting the level of regional development and competitive ability, there is need to firstly identify a series of indicators to be considered when identifying regional competitive ability. A choice of indicators is determined by availability of statistical data by these indicators.

Identification of a region's competitive ability would be more complete if it includes three mainframe aspects: the need to achieve high living standards of population, effective functioning of a economic mechanism of the region (competitive ability in the commodity market of competitive ability ensured by production) and their investment attraction (availability of infrastructure capacity in the region). Thus, main indicators of development (competitive ability) of the regions in the republic include: 1) index to determine living standards; 2) competitive ability (productivity) of the region; 3) regional infrastructure development index.

It is expedient to use a country rating strategy with regard to specifics of regional competitive ability to derive and calculate the indicators. The country rating method is a way to aggregate (compare) a series of individual indicators (criteria) into a more general indicators describing a country's (region's) by this indicator. A distinctive

feature of rating is scaling of indicators aimed to bring the indicators measured in different units (in percents, monetary terms and other units) immeasurable units, as a rule, in the range from 0 to 1 (where 0 will correspond the worst outcome among regions and 1 will accordingly correspond the best one).

It is done by conversion using the following formulas (1) or (2):

$$(1) \quad I_j^i = \frac{X_i^j - X_{\min i}}{X_{\max i} - X_{\min i}} \quad (2) \quad I_j^i = 1 - \frac{X_i^j - X_{\min i}}{X_{\max i} - X_{\min i}}$$

Where X_{ij} - is i th indicator of j th region, $X_{\min i}$ - is a minimal value of i th indicator of all j th region considered, $X_{\max i}$ - is a maximal value of i th indicator of all j th region considered. . Conversion using formula (1) is done, if the greatest values correspond the best result and using formula (2), if the smallest values correspond the best value.

The value of an integral coefficient can be obtained with the help of an arithmetic mean prime from individual coefficients, see formula (3). Value of coefficient $L_{\text{aggregate}}$ will belong to value area [0;1]. $L_{\text{aggregate}} = 1$ may be reached only in case a j th region has the best values for all individual indicators.

$$(3) \quad I_{\text{aggregate}} = \frac{\sum_{j=1}^n I_j^i}{n}$$

The calculations allow grouping regions by level of competitive ability in general as well as by a certain indicator in particular. Knowing than an index can assume values from 0 to 1, we will come up with three groups of regions with equal intervals:

Group 1 – strong competitive ability: $0.66 < I < 1.0$

Group 2 – average level: $0.33 < I < 0.65$

Group 3 - noncompetitive regions: $0.00 < I < 0.32$

1. Quality of Life Index

Population's living standards is only explained using indicators such as per capita GRP, unemployment level, disposable per capita income, average annual salary, housing level, health care system development level indicators (total area of urban housing stick equipped with piped water supply), standardized mortality coefficient for all reasons, an indicator of hospital beds availability per 100,000 people).

Navoi Region and Tashkent city comprise the group with the highest per capita GRP, Tashkent and Bukhara Region comprise an average per capita GRP level group, while the lowest level of per capita GRP is accounted for

Figure 1. Quality of Life Index in Regions

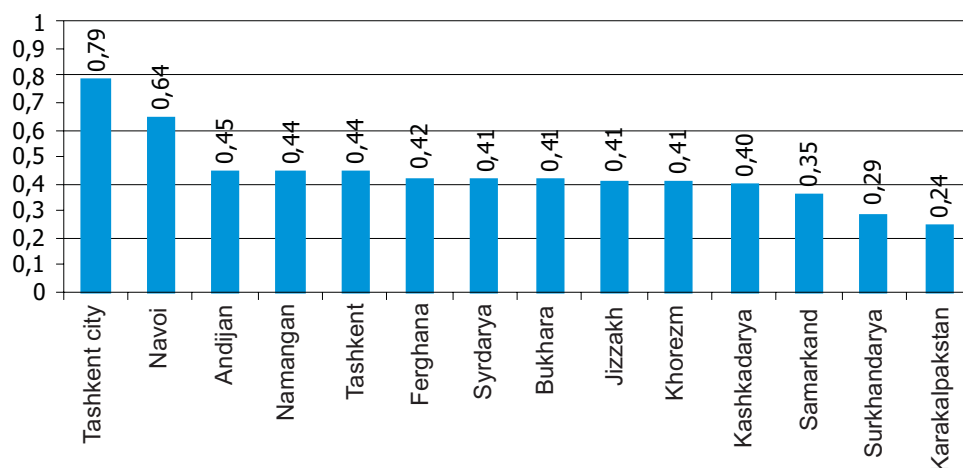


Table 1. Living Standards Indicators for Regions

	Per Capita GDP Index	Unemployment Level Indicator	Household Disposable Income	Average Annual Salary Value	Population Housing Index	Piped Water Supply Available	Standardized Mortality Index	Hospital Beds Availability Index	LIFE QUALITY INDEX
Karakalpakstan	0,00	0,00	0,00	0,13	0,38	0,42	0,20	0,81	0,24
Andijan	0,19	1,00	0,11	0,11	0,00	0,79	0,64	0,72	0,45
Bukhara	0,36	1,00	0,13	0,31	0,27	0,24	0,82	0,18	0,41
Jizzakh	0,18	0,75	0,02	0,10	0,23	0,80	1,00	0,20	0,41
Kashkadarya	0,26	0,75	0,05	0,21	0,21	0,32	0,97	0,40	0,40
Navoi	1,00	0,31	0,30	1,00	0,64	0,90	0,56	0,40	0,64
Namangan	0,01	0,69	0,03	0,00	0,22	0,88	0,73	1,00	0,44
Samarkand	0,09	0,88	0,03	0,06	0,29	0,49	0,65	0,36	0,35
Surkhandarya	0,07	0,94	0,08	0,07	0,21	0,00	0,92	0,00	0,29
Syrdarya	0,16	0,81	0,06	0,21	0,36	0,80	0,00	0,92	0,41
Tashkent	0,42	1,00	0,14	0,59	0,30	0,62	0,41	0,05	0,44
Fergana	0,17	1,00	0,08	0,16	0,31	0,76	0,78	0,09	0,42
Khorezm	0,13	0,19	0,06	0,08	1,00	0,77	0,72	0,29	0,41
Tashkent City	0,84	0,88	1,00	0,71	0,56	1,00	0,44	0,85	0,79

the Republic of Karakalpakstan, Namangan and Surkhandarya Regions.

Population's living standards to a large degree depend on growth of real income of population. In accordance with the official statistics, an increase in real monetary incomes per capita on average during 2000-2006 in Uzbekistan totaled about 16.2%. In 2006, real incomes increased as compared to 2000 on average 2.5 times in the republic.

Differentiation of regions in line with real income of population produces the following picture: the highest level (1.00) is in Tashkent, while the lowest indicators account for the Republic of Karakalpakstan, Namangan, Samarkand, and Jizzakh Regions.

In general, in line with the quality of life index Tashkent city and Navoi region show the best values, while Karakalpakstan and Surkhandarya show the worst ones.

A relatively low salary level is common for regions which mainly rely on agricultural production (Andijan, Jizzakh, Namangan, Samarkand, and Surkhandarya Regions). Relative high salaries are common for industrial regions (Tashkent City, Navoi and Tashkent Regions).

2. Competitive Ability Index

Competitive ability index consists of 5 subindices: industrial development, agricultural development, services sector development, investment activity of a regional, and availability of human capital. In their turn, each of the subindices includes several indicators.

The regional industrial development subindex includes indicators such as industrial production per capita, share of industrial production in total industrial output, export per capita (thousand USD per capita), export (million USD). The analysis shows that there is a group of regions in the country that are leaders of industrial development, who account for most of the export of the country's industrial production. This group includes Tashkent city, Navoi, Tashkent, Andijan, and Kashkadarya regions.

Share of industry on GRP of the republic of Karakapakistan, (8.3% in 2007), Namangan (8.0%), Jizzakh (7.9%), and Surkhadarya (7.3%) regions is still low.

The regional agricultural development subindex was assessed by the following indicators: per capital agricultural production (thousand soums), share of agricultural production in total agricultural output, water used in agriculture per 1 hectare (thousand cubic meters per 1 ha), area of agricultural land (thousand ha) and a number of farmers per 10,000 population.

The structure of GRP in 2007 shows that agriculture prevails in Jizzakh (49%), Samarkand (45.6%) Surkhandarya (45.5%), Syrdarya (43.9%), Khorezm (41.5%), and Namangan (38.6%) regions. An aggregate subindex of agriculture shows that the group with high agricultural development indicators include Bukhara, Kashkadarya, and Samarkand regions. The leading position of Bukhara region is explained by the fact that the per capita agricultural production indicator in 2007 in Bukhara region was the greatest and amounted to 536.6 thousand soums.

In addition, Bukhara region has the lowest water use per hectare. Thus, and aggregate subindex of effective use of land and water resources in the region, where agriculture dominates in GRP, do not show the highest indicators of effective land and water use. Namangan region and the Republic of

Karakalpakstan show low agricultural development indicators within the subindex. This occurs due to a low value of the per capita agricultural production (in 2007, it amounted to 189.1 thousand soums) and the highest water use per cropland hectare.

Figure 2. Regional Industrial Development Subindex

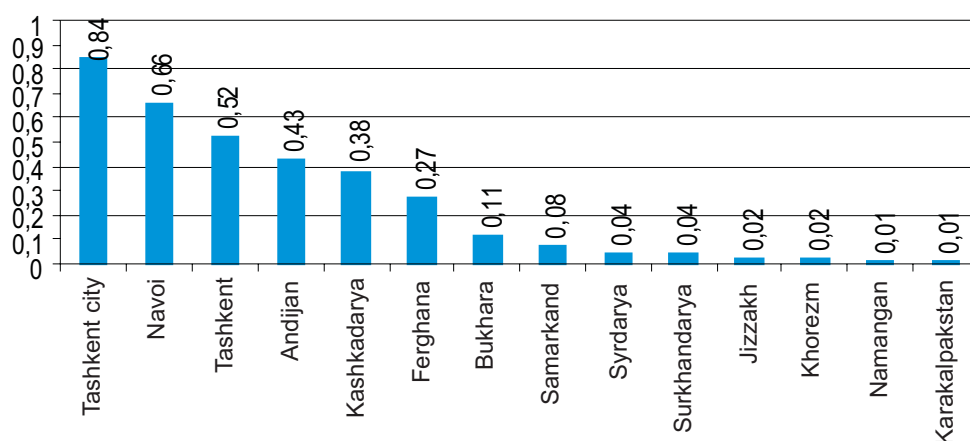


Figure 3. Regional Agricultural Development Subindex

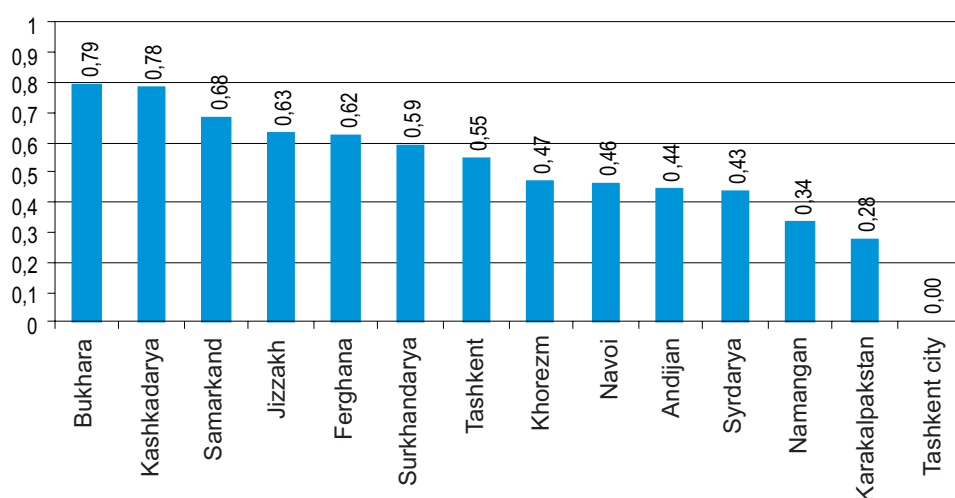
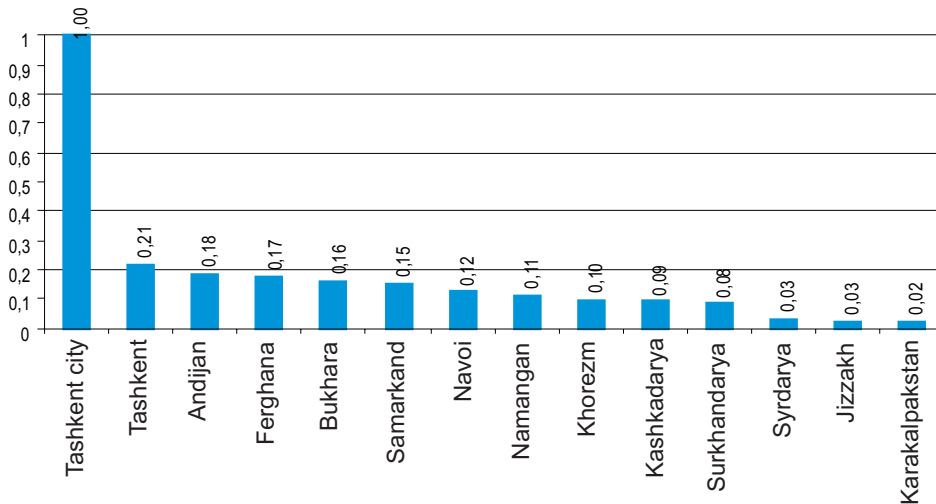


Figure 4. Services Sector Development Index in Regions

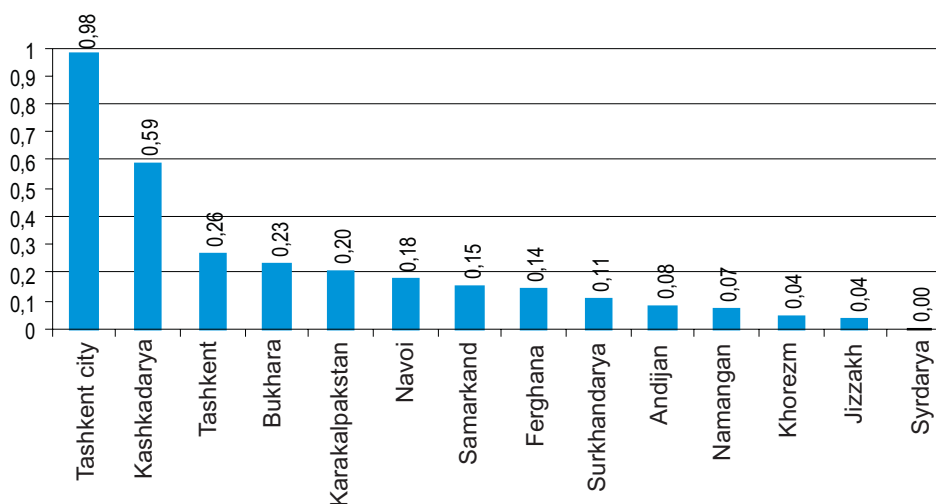


From the perspective of ensuring structural transformation of economy and full employment, it is important to develop the services sector. The regional services sector development subindex analysis showed that regions were the following indicators were used: fee-based services per capita, share of fee-based services in the region in total volume of fee-based services, per capita commodity turnover, share of regional commodity turnover in total commodity turnover.

An equivocal leader in this sector is Tashkent city. The lowest indicators are found in Syrdarya, Jizzakh regions, and the Republic of Karakalpakstan.

The investment activity subindex allows assessing a capacity of investment appeal of a region and main lines of investment policy of the government throughout regions.

Figure 5. Regional Investment Activity Subindex



Indicators used to analyze regional investment activity are share of regional investments in total investments, volume of investments in fixed capital (billion soums), FDI (million soums), commissioning fixed capital (billion soums), construction activities by a non-governmental sector (billion soums).

As seen on the Figure 5, most investments are concentrated in Tashkent city, Kashkadarya, and

Tashkent regions, and they become poles of investment growth. These regions are also leaders by industrial development indicator.

Syrdarya, Jizzakh, Khorezm, and Namangan regions show the lowest level according to the investment activity subindex.

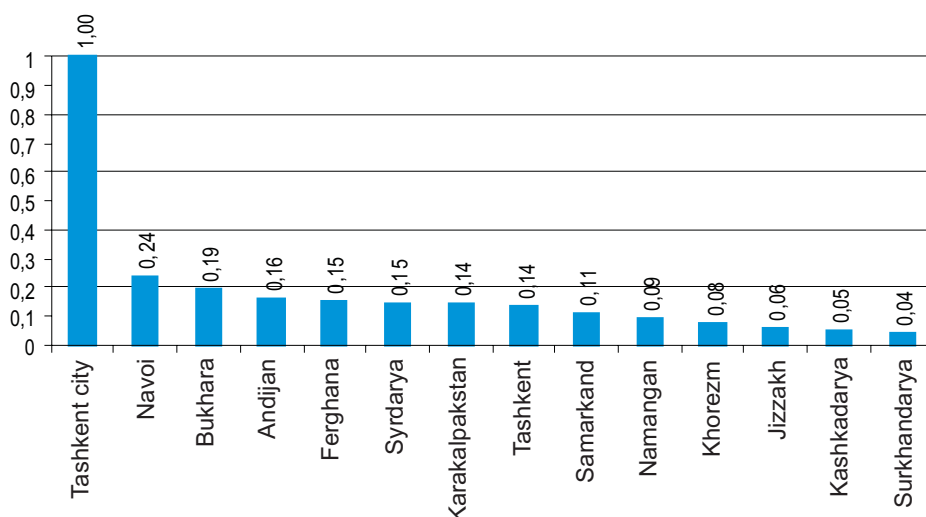
The human capital subindex was calculated using the following indicators: share of economically active population in the region, number of university students in the region per 10,000 population, graduation rate of specialists by

higher education institutions per 10,000 population, population density per 1,000 square meters, share of urban population in the region.

The most striking contrasts are evident between western and eastern Uzbekistan. The eastern part occupying 4% of the territory has 25.8% of total population, while the eastern part (72.2% of the country's territory) has 18.8% of population, while its density is 24 times lower, than in the eastern part of the country.

The Republic of Karakalpakstan and Navoi Region occupy the largest territory in the republic – 61.8%, but show low population density 8 people/square km and unequal location of population due to environmental specifics and location of production forces.

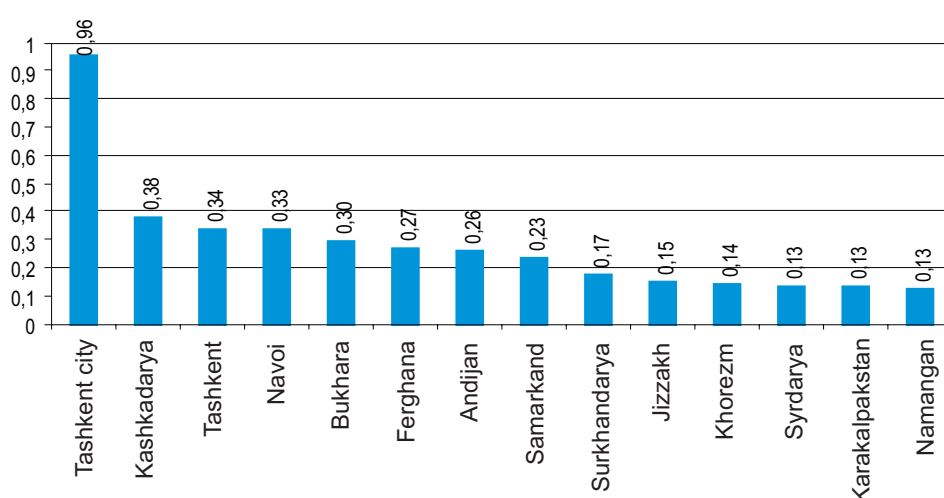
Figure 6. Regional Human Capital Subindex



By all indicators that characterize a human capital subindex, Tashkent city is the leader. Four regions: Navoi, Bukhara, Andijan, Fergana, and Syrdarya regions make up a group of regions that are equal by human capital development level and have the greatest potential as compared to other regions by development of the industries dependent on highly qualified workforce.

The competitive ability of the regions shows that Tashkent city has the highest competitive ability index, primarily due to the fact that Tashkent is the hub of developed industry, services sector, scientific potential and investments. According to the Figure 7, the country has a group of regions Kashkadarya, Tashkent, and Navoi regions with indices from 0.33 to 0.66 which are able to move up to the group of highly competitive regions. The remaining regions with the indicator values lower than 0.33 could also be divided into two groups. The first one is Bukhara, Fergana, Andijan, and Samarkand regions, which have specific competitive advantages by certain indicators and able to play a significant role in activating investment and industrial development of the country. There is also a group of 6 regions including

Figure 7. Regional Competitive Ability Index

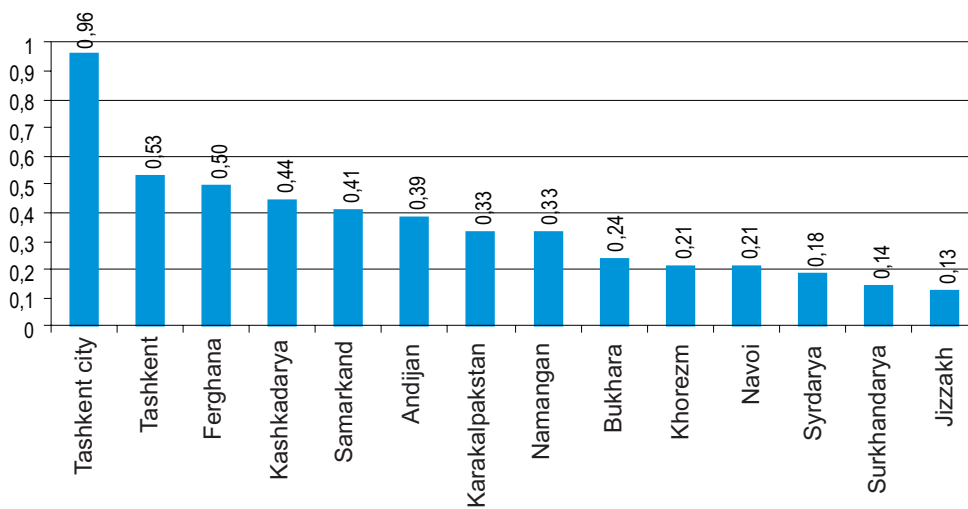


Surkhandarya, Jizzakh, Khorezm, Syrdarya, Namangan regions and the Republic of Karakalpakstan, which show the lowest indicators of the competitive ability index. At the same time, the following pattern is worthy of mention: in 2006, six regions (republic of Karakalpakstan, Andijan, Jizzakh, Namangan, Surkhandarya, and Khorezm regions) out of 14 were subsidized, that is, their local tax revenues and deductions by regulating taxes did not cover expenses. Except for Andijan region, a list of subsidized regions is consistent with a list of regions with the worst indicators and by competitive ability index.

3. Infrastructure Development Index

The infrastructure development index was calculated using indicators such as construction (billion soums), hard

Figure 8. Regional Infrastructure Development Index



surface automobile road mileage (thousand km), hard surface automobile road density (km per thousand square km), common use rail mileage (km), density of common use railroads (km per one thousand km), mileage of heating and steam networks in two-funneled calculation in cities and urban-type settlements (km), mileage of street sewerage networks in cities and urban-type settlements (km), mileage

of piped water supply network in cities and urban-type settlements (km), mileage of street gas supply network in cities and urban-type settlements (km).

With the exception of Tashkent city which is a leader by this index, a group of regions including Tashkent, Fergana, Kashkadarya, Samarkand, Andijan, Namangan regions and the Republic of Karakalpakstan show relatively high indicators of infrastructural development. High infrastructural development indicators in the Republic of Karakalpakstan are largely the result of realizing major infrastructural projects (railroad and automobile road construction) and a high level of urbanization in this region. Presence of Bukhara and Navoi regions in the group of regions with the lowest infrastructural development index is largely explained by the fact that most of the territory in these regions is located in desert and steppe areas.

The aggregate regional development index shows that the country has an unequivocal development leader – Tashkent city. The group of regions with an average development index includes Tashkent, Kashkadarya, Fergana, Navoi, Andijan, Samarkand, and Bukhara regions. A special emphasis should be placed on active development of industrial potential in these regions within the frameworks of regional policy to transform them to leading regions of industrial and innovative development.

Low regional development indices are intrinsic to the following regions: Namangan, Khorezm, Syrdarya, Jizzakh, Surkhandarya and the Republic of Karakalpakstan, which remain subsidized and agricultural production still dominates in their regional economies.

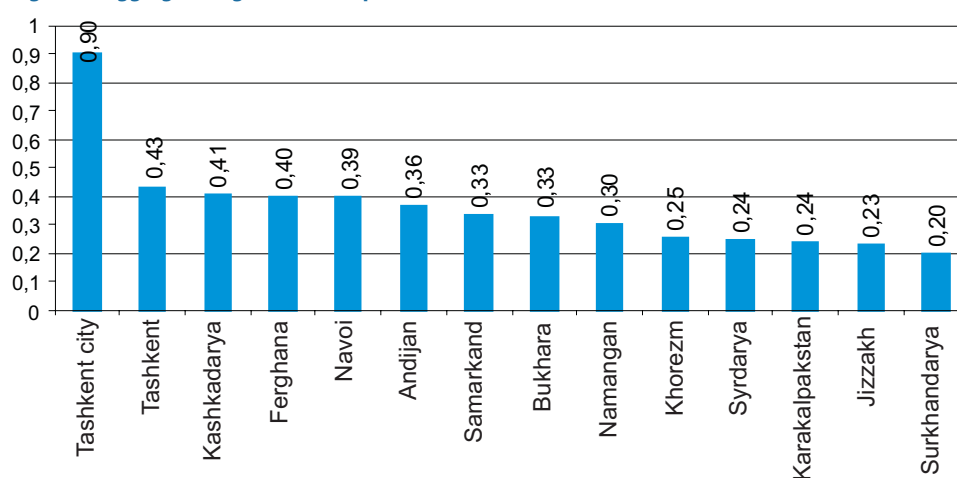
They have the following specific features:

- weak urbanization

- predominantly agrarian economy of seminatural type
- significant population growth
- traditionally large families and a heavy load of dependents
- high unemployment level, especially among young people
- low mobility of population
- the lowest per capita monetary incomes
- poverty is typical for an overwhelming majority of population.

Thus, regional development of the country is facing a number of problems, such as, unequal distribution of incomes among regions, serious local socioeconomic problems, existence of depressive districts and residential areas, poor status of infrastructure, uncongenial business climate at the local level, flaccid use of economic potential in the regions as well as inadequate economic activity of the regions.

Figure 9. Aggregate Regional Development Index



Differences in socioeconomic development of the regions, presence or absence of large-scale industrial enterprises in the regions are the main factor of differential of poverty in the regions. Thus, owing to the presence of industrial enterprises, Navoi, Tashkent, and Bukhara regions achieved high level of socioeconomic development.

High development level of Tashkent city is explained by intensive business activity of domestic and foreign businesses. Low level of economic development in Karakalpakstan and Khorezm region mostly result from complex natural and climatic conditions, while Surkhandarya region is distant from major transportation routes in the country, Fergana region has limited land resources. On account of the aforementioned reasons, the regions were less attractive for investments what led to hampered economic development.

Analyzing the level of regional differentiation in the country, it should be noted that efforts made by the Government of Uzbekistan as well as measure to ensure macroeconomic stability, institutional and structural transformation prevented a dramatic increase in differentiation of territorial development in the country. According to the gross regional product indicator (GRP), its level in Uzbekistan (4.2 times in 2003) is, for example, significantly lower than in Russian (up to 30 times) or in neighboring Kazakhstan (up to 12 times). For the purposes of comparison, it should be noted that in European Union countries a gap between maximal and minimal regional development levels does not exceed 2.5-3 times. At the same time, measures taken could not bring about a significant reduction in differentiation of territorial development in Uzbekistan.

There is a need to understand that regional policy is eventually not a final goal, but only an instrument of efficient use of territorial resources, regional cooperation, and scale up development in depressive regions. Without a clear realization of what the space in Uzbekistan represents today and without knowing true roots of territorial problems, effectiveness of any strategy for regional development and appropriate investments will be questionable.

Appendix 5. Concept of the urban core

Urbanization policy, as a component, could intend implementation of the concept of the “urban core”, which represents the spatial equilibrium model rendering substantiation of economic area decomposition by specific area of the cities-centers influence.

Concept of Urban Core

The study of the functional interaction of cities led to formation of the core concept that structured the national economic space. Concept of the urban core represents structured description of the national economic space as complex multilevel system of greatly diverse urban area of influence (with respect to their typology). Therefore, the recognition of the distinct role of the cities (as the focus of the economic activity) as well as their interrelation within the country economic activities underlies the concept of the territory core. Herewith, the rest territory of the country is perceived as a subsidiary part of the economy.

Development of the urban core concept could influence the process of formation of a specific territorial policy. Therefore, it is essential to conduct comprehensive research of existing spatial city configuration and diagnostic of its development problems. As a results of the work, a country government’s and leaders of administrative territorial entities could be provided with the extensive list of recommendations on the basis of analysis and description of geographically disbursed real mechanism of national economy functioning. Notably, that kind of research makes it possible to recognize both “growth poles” (nationwide development frontier) and weak point of the system that could lead to failure of the mechanism. Hence, conceptual tool of urban core, being a result of the economic brainwork during last two centuries, provides diagnostic aids for sufficient extended diagnostic of national economy and of its regional view primarily.

Experience of Urban Core Formation in France

In the second half of 50-th and beginning of 60-th the French Government had to take the responsibility for some particular regions while confronted the problem of significant socioeconomic shifts. In this context, it became necessary to shape the policy for territorial development and corresponding governing institutions have been established, in particular, special Committee has been set up (as part of General Plan Commissariat) that handles the issue of urban core. Representation office for territorial arrangement and regional development has been also established - DATAR (Delegation a l'Aménagement du Territoire et a l'Action Regionale). Various researches on urban core issues are conducted under the guidance of those organizations.

Research work in Hautreaux, Lecourt, Rochefort, 1963, has been the origin. They have documented the presence of massive urbanization zones.

1. North-South Axis along Ron with two branches to the north (in Alsace-Lorraine) and two derivations to the south along the Mediterranean seaside.
2. Urban ring formed by the frontier in the north of Uaz valley, Paris and Sena valley.
3. Semi-ring of cities along the bank of Normandy and Brittany and Luar valley.

The most important analysis phase has been development of the total hierarchical list of French cities, each of which has been described by 20 exponents. Preliminary the largest cities have been put in order with the use of 13 exponents where the main attention has been given to the variables of service sectors’ performance (in private and public sectors). Development of those hierarchical lists of cities on the basis of aggregated indicator calculated with the use of weighted coefficients allowed to detect the most significant elements of the core.

Predominant role of Paris is undoubted for the whole territory of France. The first group comprised of 8 large provincial centers such as Lion, Marcel, Bordeaux, Lille-Roubaix-Turkuan, Toulouse, Strasbourg, Nantes, Nancy (above 450 points). The second group aggregates 10 full-fledged centers of regional state: Grenoble, Rennes, Nice, Clermont-Ferrand, Rouen, Dijon, Montpellier, Saint-Etienne, Caen, Limoges (380-430). The third group consists of regional centers of minor/secondary importance, specifically, 25 cities that are segregated into three sub-groups (277-370). The fourth group of 33 cities has been also divided into three sub-groups (220-270). Hereafter, two top level groups of the urban core have been studied. Initially the zones of influence of 8 largest centers have been determined, those cover significant part of the territory of France province (though representing in total much less than a half of France). The rest of the territory is mainly influence by Paris but some part of which is an integral element of the regional centers of minor/secondary importance. The focus on the service functions predetermined the method for discriminating of the zones as a result of the analysis of both long-distance phone calls and railway passenger traffic. Compounded cities functions' data and cross-cutting linkages allowed to attain the detailed description of the core and provided the possibility to specify the rank of each city in the regional systems.

In the period of a few decades passed after the first wave of research completion, France faced drastic changes generated at the first place by the integration processed within the European Union (EU), as well as by considerable technologic changes and revolutionary shifts in the management of large firms. For this reason the core description of the discontinued to correspond to the real structure of the economic space. Specifically, magnitude of complementarity and synergy within the cities of one group became more important; many local centers at the lower level lost their dominancy, so that dehierarchization process has been evidenced in the group of medium and small size cities. At the same time the role of Paris has been strengthened as intermediary power between France and worldwide urban core. All that brought for the problem of conducting the detailed research of the French urban system in order to formulate the policy of further integration into the general urban system of the EU.

At the first stage of the research the in-depth functional analysis of cities with population size above 50 thousand people has been carried out. Over 100 cities have been studied. Information regarding some sectors' performance has been grouped so that to identify how the cities are developed in major functional groups such as 1) assuring the reproduction on an enlarged scale, 2) managerial and agency business in the area of private activity (economic center), 3) immediate manufacturing of industrial products, 4) focus on the service provision to the private clients. Rennes, Montpellier, Caen, Besançon and so on (the cities of the state subordination) are the representatives where the first group of functions predominates. The second group of functions is essentially developed in large and middle size multifunctional cities: Lyon, Marseilles, Lille, Bordeaux, Nantes, Orleans and etc. High-specialized industrial centers are typical for middle and small size cities only, nevertheless, Saint-Etienne stands out in developing such centers among large multifunctional cities. In the fourth group of functions the middle size cities such as Nice and Cannes, specialized in tourism, could be mentioned.

In addition, urban typology has been determined with regard to the functional structure as well as to the degree to which the functional structure is developed. As a result of Special indicators analysis, four main levels have been distinguished: 1) multifunctional cities, 2) cities of middle level of specialization, 3) specialized cities, 4) hyper-specialized cities.

Paris belongs to the group of specialized cities and is characterized by double specialization (State city and economic center). Lyon, Marseilles, Lille stands out in the first group (some domination of the function of economic center) as well as Rouen (domination of the function of state city). Toulouse, Strasbourg, Grenoble, Nancy, Clermont-Ferrand, Dijon (denominated specialization as state cities) and Saint-C Quentin (among cities with mainly industrial orientation) could be noted in the second group. In the third group Perpignan (with

focus on customary services), as well as Metz, Limoges, La Rochelle (state cities) could be mentioned. Already named state cities (Montpellier, Ren could bees, ets) could be marked among the hyper-specialized cities.

Cities in the stage of stagnation has been detected also, two seaport such as Le Havre and Toulon could be mentioned among others. While studying linkages of those ones, the authors have identified binary hierarchy system. On the one hand, Paris as the capital controls the whole territory of France, it simultaneously performs the function of the Paris' Bassein center (slightly wider than the region of Ile-de-France). Seven province centers Leon, Marseilles, Lille, Bordeaux, Nantes, Toulouse, Strasbourg have been covering with their authority the rest of the territory. We observe that within 30 years the role of the province center Nancy has been significantly weakened and, as a result, the city has not been included into the first level. It has been detected that Paris has hypertrophic dominant role which is particularly seen by the example of railway passenger flow structure (the linkage among provinces nearly absent). Modernization of the railroad network only intensified the metropolitan orientation.

Extremely important structural role of large country towns has been also distinguished. Lion stands out in the group and determines the economic life of the vast region in the central eastern part of France; further on, Lille is necessary to point out as being the focus of the whole northern region of France (including shore area); Alsace-Lorraine are influenced by strongly interrelated cities of Strasbourg and Nancy with the obvious dominating role of the first; three groups of cities shows up on the Mediterranean coast: Nice- on the Cote-de' Azur; Marseilles – Rhone's delta and Languedoc area (around Montpellier). On the west and south-west Nantes, Bordeaux and Toulouse show up.

Conducted functional analysis identified two main types of large city model on the territory of France. The first type (Paris Model) is characterized by high concentration of superior functions and high percentage of managerial work positions. The second (Lion type), in opposite, is characterized by balanced functions and all activities presented in the town. The dynamic of the last 30 years demonstrated the orientation of the large provincial cities toward the Paris Model. Corresponding type of regional core organization with the distinct hierarchy has been consistent with the main objectives of post-war decades, but by the end of the century this model perceived as outdated since it did not secure for the territory satisfactory and complete use of the European integration advantages.

Large country cities, following the Lion model, represent the balanced profile, they are complemented by the state cities that render in the region significant range of public and private services. It could be also noted that some state cities focus on economic center functions (Toulouse, Grenoble, ets). Seven zones surrounding large country cities differ greatly in the degree of their influence. The area of Lille and Toulouse provides an example of the strictly hierarchical regional system, to the contrary, in the area of Nantes and Strasburg there are the systems of mutual functional supplementation, in which regional and sub-regional centers play significant role. The systems lead by Lion and Bordeaux could be referred to the hybrid type. There is well balanced hierarchy linking large cities with the others supplementing ones such as, for instance, Dijon and Clermont-Ferrand in the hybrid type. Marcel zone appear to be in an exceptional position by falling the substantial part of it under the direct influence of Paris.

In the central zone, lead by Paris, relationship structure is designed on a different way. The Polis is practically specialized in the branches of the tertiary sector and state administration. Well-balanced range of sectors' branches could be identified only in the supporting regional centers, for example, in Orleans and Rouen. Their role in the capacity of focus regional sub-systems has been preserved despite the prevalence of Paris. It refers to the north-eastern subsystem of Rheims. In general, core analysis provides an opportunity to determine the types of the regions' development and, at the first place, the relations between the focuses and provinces of the

regional systems ('equilibrium type of development or reinforcement of polarization effect).

As a result of the research led by Otre and Roshfort, French Urban Development Plan has been developed and, in particular, the policy of equilibrium city-centers development that was proposed by the V-th French Plan of Development (1965).

Enhancement of the high level cities brought the Authorities to the decision to develop 8 leading urban agglomerations (sometimes consisting of several cities-polis) in the capacity of interim economic centers in order to compensate an economic lag between the provinces and exploded zones of the Big Paris (to recover special economic equilibrium): 1) Lion (Saint Etienne, Grenoble); 2) Marseilles (Aix); 3) Boudreaux; 4) Lille (Roubaix, Tourkuan); 5)Toulouse; 6)Strasbourg; 7) Nantes (Saint-Nazaire); 8) Nancy (Metz, Tionville). The result of the research at regional level have attracted attention of the National Land Improvement Commission to the problem of existence of the intermediate level in the urban core (between large cities-centers and local centers). It particularly justifies the policy of two-or-three Polis conurbation development (Lion, Saint-Etienne, Grenoble).

However, further progress showed that the idea of province centers establishment hindered the development of the main city and was to some extent unrealistic. Specifically, the issue of resources' disbursing with regards to very large number of perceived centers. Thus, it has been proposed to limit the program to three, the most perspective, in author's judgment, centers (Marseilles, Lion-Grenoble-Saint Etienne and Lille-Roubaix-Tourkuan). The further progress indicated weakening the role of Marseilles which western zone (around Montpellier) fell under the direct influence by Paris. At the same time, the role of Lion has been strengthened as the second economically most important city in the country. To compensate the V-th Plan's territorial program shortcomings, VI-th Plan has been focused on state support provided to the development of middle-size cities. Later on the focus has been moved toward the small towns.

Nevertheless, in the beginning of 80-th economic development issues made the Country leadership to undertake some economic decentralization accompanied by delegation of some territorial administration competencies to relatively autonomous sub-national regions. Consequently, the issue of strengthening of the core cities in the regions has gone to the front burner by the end of 80-th.

Overall, such a research of French core of 80-th, detects its explicit archaism and identifies fundamental difficulty of French cities in-building into the common European core. In particular, some weakness of the "regional" concept has been observed which is linked to underutilization of the industrial development potential. It is generally recognized that significant changes in the core structure come across fundamental difficulties of institutional, sociological and cultural nature. There is no getting away from the fact of their existence. They represent the natural consequence of the whole preceding development of the country.

The problem of the core development brings up the question of matching the city plans of those closely connected by territory and manufacturing chain. French experience indicates absence of clear defined doctrine and concise methods in this area of nation-wide state territorial policy. It is related to the level of territorial regions, administrative authorities of which insufficiently adjusted to the effective work in the area of urban core.

The perspective trend of core enhancement appeared to be the promotion of urban network interrelation. It contemplates recognition of mutual computability and peculiarity each of them. Implementation of this approach at the level of regional schemes seems to be the most relevant where the role of the central city is not limited to almost absolute concentration of all superior types of business activities on its territory, but, in opposite, development of diversified regional urban network is foreseen. It is proposed to take as model the

Lion model of cities system which provides illustrative evidence of mutual complementarity among central city, intermediary cities and regional structure with industries developed sufficiently at all levels.

The French experience confirms the difficulties related to policy implementation in establishing new cities. If they are built up far from the large centers (in order to activate growth of underdeveloped economic zones), then the perspectives of their independent full-fledged functioning (without additional centralized investments) remains quite ambiguous. If they are located close to large cities, then the new ones experience gravitation by the large cities and are transformed into cities with fragmentary set of city functions and focused on residential function mainly (sleeping area) designated to offload the central city.

Apparently, the realistic dimension of new city policy one must admit as the main, then complementary and second-rate nature of those cities should be recognized beforehand and taken into account while choosing the location. Those cities should be situated close enough to the influence Pole in order to ensure efficiency maximization of the investments into the city infrastructure. Experience of such techno polis as Zelenograd in the area of Moscow as well as Serge within the Big Paris presents certain vital sustainability of such cities because of vicinity of a metropolis and excessive remoteness from it at the same time caused by the design engineers who underestimated the importance of the neighborhood. In summary, comprehensive new city policy success could be observed quite rarely as experience shows. It is overall recognized that development and implementation of the urban core policy for a country or its region is a difficult project. At the same time, considerable reserves in enhancing the competitiveness of a city, region and a country as a whole appears to be gained, given that such a policy is successfully implemented.

Appendix 6. Brief information about the Project «Construction of industrial and innovative Technopolis “UZ City” in Sergely district of Tashkent City

Project objectives: Main objectives of Industrial and Innovative technopolis “UZ City” are:

- creation of prosperous conditions for development of high tech, innovative industries,
- promotion of foreign direct investment inflow,
- development of industrial and innovative, research and education, and cultural and tourist potentials,
- development of production, transportation and transit, social infrastructure of Tashkent city as well as increasing of its international competitiveness.

Project rational: The Project foresees development of modern business infrastructure including construction of the business center of international standard and of up-to-date tourist and entertainment complex; establishment of the center for development and implementation of the leading edge technology on the basis of technopolis and also opening branches of leading international educational institutions in the area of high technology. So, construction of “UZ City”, industrial and innovative technopolis, will comprise from four zones: 1. Business area; 2. culture and touristic zone; 3. scientific and research zone; 4. Residential area.

1. Business area includes: UZ_Tower- Trade Tower- International Business Center (48 floors), Hotel (34 floors), Convention Center, International Hospital.
2. Culture and tour Zone consists of Art- Gallery, Central Street (Culture & Touristic Street).
3. Scientific and Research zone contains a group of buildings where educational (International School) and scientific and research institutions would be located as well as innovative and research and implementation enterprises and firms. Ultimately it is possible in this zone to form innovative technopark – high technology venture complex with participation of research institutions and laboratories of the foreign companies. Optimal conditions for It development.
4. Residential Area, will hold modern residential buildings satisfying of up-to-date requirements (approximately 18 th. Apartments), and Central Park in the Center of residential community with recreation area in it, planning of the “green road” as “green” center of the technopolis.

Development of the industrial and innovative technopolis «UZ City» is:

1. Formation of a new center of industrial and innovative development and high technologies (Pole of growth) for transition to industrial and innovative economy.
2. Application of modern urban development systems under the post industrial period by using an advanced foreign know-how.
3. Increasing in Tashkent potential and creating conditions for transforming Tashkent city into modern center of commerce, finance, information technologies, increasing of its international competitiveness.
4. Establishment of a new international level educational
5. Foundation of a new culture and touristic Center.
6. Gradual modernization of urban infrastructure of Tashkent
7. Ensuring the foreign investments inflow by developing an up-to-date infrastructure
8. Initiating the Fond of New Comfortable Housing
9. Enhancement of building industry and construction of new enterprises intended to produce construction materials.
10. Origination of new work positions

Project financing: The Project is implemented with the attraction of foreign investments in the amount of 8.2 bln USD. Capital mobilization and project implementation will be secured by Korean Company «WONYANGSMA». Do this requires to officially formalize the status of the «WONYANGSMA» company as the Project Management Company (PMC). The PMC endows the land plots in the territory of technopolis to the construction companies, investing into construction, granting them the right of subsequent sale of completed buildings.

The Project Management Company assures:

- Coordination of accomplishment of common project activities and land evaluation jointly with the special government working group;
- Self-sufficient working capital management (investments attracted);
- Project planning (Business plan development and Technopolis' Master Plan development);
- Quality control of construction/civil works competed;
- Assignment of lands for constructing of technopolis' objects;
- Conducting the civil works tender for construction companies-investors;
- Granting permission for construction works;
- Public relations to promote UZ City brand;
- Design of marketing strategy in order to sell UZ City technopolis' real estate units by installments.

Project site: Tashkent city suburb, Sergely rayon. The site has been chosen in light of strategically gainful geographical location of Tashkent city in the region and Sergely rayon due to closeness to the international airport, interstate highway and rail way.

Area: 510 ha, of which Block Area -270 ha, Public Area - 240 ha.

Implementing Agencies: Project Management Company in cooperation with the Government of Uzbekistan, Project duration: 2009-2016

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