

## Forecast of Changes in the Composition of Urban Settlements and the Level of Urbanization in Southern Uzbekistan

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**Abstract.** This article presents a forecast of the changes in the total urban population, the composition of urban settlements, and the level of urbanization in Southern Uzbekistan – specifically, the provinces of Kashkadarya and Surkhandarya – for the short-term (2030), medium-term (2040), and long-term (2050) horizons, using the method of extrapolation. The forecast is based on the analysis of relevant retrospective data covering the period from 2009 to 2024. In addition, the dynamics of changes in the urban population and urbanization level for Uzbekistan as a whole, as well as for Kashkadarya and Surkhandarya provinces up to 2030, have been mathematically modeled.

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**Keywords:** Southern Uzbekistan; urbanization level; city; forecast; population forecast; urban settlements forecast

### 1. INTRODUCTION

At present, the main quantitative indicator for evaluating the development of urbanization processes worldwide is considered to be the level of national urbanization – that is, the proportion of the country’s population residing in urban areas [8]. From this perspective, population size and related demographic processes are the most significant factors influencing current and future changes in the level of urbanization at both national and regional levels.

In the Republic of Uzbekistan – and in particular, in the study area of Southern Uzbekistan – an analysis of the demographic indicators of the urban population shows that there are still numerous challenges in this field. Specifically, while the level of urbanization continues to rise in many developing countries worldwide, this indicator has been declining year by year in our country and its regions. This situation is a phenomenon unique to Uzbekistan (the word “unique” is derived from the Latin term *unicus*, which means “single,” “unrepeatable,” or “distinctive”); in principle, there should be a direct positive correlation between the economic development of a country or region and its level of urbanization.

Population projections are scientifically grounded forecasts about the future size, structure, and spatial distribution of the population. They are developed on the basis of analyzing and modeling demographic processes. The preparation of population forecasts holds great practical significance for planning and implementing the economic, social, ecological, and demographic policies of countries and regions in both the near and distant future.

In economic planning, for instance, they play a crucial role in determining labor market trends, production and consumption demands, urban development and infrastructure planning, housing construction, transportation, and utility service provision. Furthermore, population forecasts are essential for designing social policy programs – including those related to education, healthcare, and pension systems – and for ensuring environmental sustainability by maintaining a balance between population growth and resource use.

### 2. LITERATURE REVIEW AND METHODOLOGY

Numerous scientific studies have been conducted on the growth of settlements and populations, with some of the earliest theoretical foundations laid by Thomas Robert Malthus. In his seminal work “An Essay on the Principle of Population” published in 1798, Malthus advanced the idea that while population tends to grow geometrically, the means of subsistence, such as food production, expand only arithmetically. This theory later served as an important basis for understanding challenges related to population growth within the context of urbanization [5].

A distinguished member of the Royal Geographical Society and a renowned urban scholar, Ernest George Ravenstein (1834–1913), was the first to systematically investigate the role of migration in urbanization processes. He formulated a series of migration laws that laid the groundwork for modern migration models and urbanization forecasts by explaining internal migration flows that drive urban population growth [10].

Furthermore, various aspects of urban development have been examined in influential works such as Patrick Geddes's *Cities in Evolution* (1915), Kingsley Davis's *The Urbanization of the Human Population* (1955), Brian Berry's *Geography of Market Centers and Retail Distribution* (1967), and Manuel Castells's *The Urban Question* (1972) [4;3;1;2]. Among Soviet scholars, significant contributions have been made by N.N. Baransky, Y.G. Saushkin, O.A. Konstantinov, N.V. Zubarevich, I.M. Mayergoiz, G.M. Lappo, B.S. Khorev, E.N. Persik, Y.L. Pivovarov, and V.Sh. Dzhavashvili. In Uzbekistan, geographical aspects of urbanization have been thoroughly analyzed by researchers such as Z.M. Akramov, E.A. Akhmedov, I.V. Smirnov, T.I. Raimov, O.B. Ata-Mirzayev, A.S. Soliyev, A.A. Qayumov, Z.N. Tojiyeva, S.S. Zokirov, and others. Notably, in recent years, Professor Z.N. Tojiyeva has conducted studies projecting demographic changes in Uzbekistan up to 2030 (2017) [9], while Professor S.S. Zokirov has produced forecasts for the population of major cities up to 2040 [11].

Demographic projections vary according to the purpose of the research, the selected study area (global, national, or regional), and the time horizon (short-term, medium-term, or long-term). Depending on the specific research objectives, several methods can be applied: extrapolation based on current population growth trends, the cohort-component method for analyzing population structure by accounting for fertility, mortality, and migration, economic-demographic models for assessing the impact of economic factors on population dynamics, and scenario-based forecasting methods tailored to different socio-economic conditions.

In demographic forecasts related to urban populations and urbanization processes, key factors include the urbanization level, migration patterns, and the pace of economic development. When forecasting urbanization processes, researchers estimate the urban population share within the total population, project the population size for each urban locality, and model the expansion of urbanized areas along with the economic and ecological development of cities.

This study employs a combination of statistical analysis, mathematical modeling, system-structural approaches, comparative geographical analysis, and extrapolation techniques.

### 3. RESULTS

As a result of the economic reforms implemented during the years of independence, numerous industrial and infrastructure facilities have been established in Southern Uzbekistan. Examples include the Kokedumalak Compressor Station, the Shurtan Gas Chemical Complex, the Dehqonobod

Potash Plant, the Uzbekistan GTL plant, the Tolimarjon Thermal Power Plant, the Topolang Reservoir and Hydroelectric Power Station, the Sherobod Cement Plant, and the Toshguzar-Boysun-Qumqorgon railway line, among others. The construction and commissioning of these facilities have contributed not only to the economic development of the region but also to the growth and transformation of urbanization processes and the emergence of new urban centers [6].

Kashkadarya and Surkhandarya provinces differ significantly in terms of their socio-economic development levels, the availability of natural resources, and the extent to which these resources are utilized. Consequently, when formulating future development strategies for these provinces, it is crucial to take into account their unique characteristics and capacities. For instance, at the national scale, Surkhandarya Province remains geologically underexplored. Therefore, further geological prospecting activities are planned, with a primary focus on developing heavy industry sectors such as the fuel and energy complex, non-ferrous metallurgy, and building materials industries. Newly discovered oil and gas fields, polymetallic ore deposits (e.g., Khonjiza), coal resources in Boysun and Shargun, and abundant construction material quarries are expected to serve as key sources of industrial growth [7].

Additionally, given the significant reserves of raw cotton and silk in the province, new capacities in the light industry sector will be launched, particularly in irrigated districts. In areas specializing in horticulture, viticulture, and vegetable production, the food industry – including fruit preservation and wine production – will continue to expand. The Toshguzar-Boysun-Qumqorgon railway, which connects the province to the national rail network, further enhances logistical potential and regional development.

Kashkadarya Province, in contrast, is significantly ahead of Surkhandarya in terms of resource exploitation, the scale of socio-economic development, and the volume of investments attracted. In the near future, the province is expected to continue specializing in the gas processing industry, with the increasing contribution of the Muborak Oil and Gas Production Administration, the Shurtan Oil and Gas Branch Enterprise, and numerous foreign joint ventures. The share of these companies is projected to grow, with new joint ventures being established within this sector.

Major industrial hubs such as the Shurtan Gas Chemical Complex, Uzbekistan GTL, the Muborak Sulfur Plant, and the Dehqonobod Potash Plant serve as anchors for the emergence of new chemical industry enterprises, positioning the province as the third-largest chemical production center in Uzbekistan after

Tashkent and Navoi regions. To increase employment opportunities for women in areas surrounding these heavy industrial facilities, it is advisable to promote the development of light and food processing industries [6].

Moreover, the construction of residential areas under the “New Uzbekistan” initiative, alongside the implementation of the “Prosperous Neighborhood” (*Obod Mahalla*) and “Prosperous Village” (*Obod Qishloq*) programs, will drive the expansion of the construction materials industry. In line with these initiatives, modern brick factories have been established in almost every district between 2017 and 2024, as well as cement plants in Sherobod and Jarkurgan, a marble processing plant in Kitob, and reinforced concrete and plastic product manufacturing plants in Qarshi and Termez. Many of these enterprises are already producing initial outputs.

In the Kitob-Shahrisabz depression zone, where industrial mineral reserves are relatively scarce, but labor resources and transportation infrastructure are well-developed, it is feasible to focus on labor-intensive industries such as textiles, knitwear, garment production, and fruit canning.

In summary, the region possesses substantial socio-economic development potential. However, it is unrealistic to exploit these opportunities instantaneously, especially within a market economy context. Consequently, ensuring the economic security of both the region and the country requires not indiscriminate development but rather the strategic identification and prioritization of key growth poles and centers that will serve as drivers for the regional economy.

In the near future, Kashkadarya Province is expected to play the leading role in activating the economic potential of Southern Uzbekistan. Several growth poles and centers contribute to the province’s socio-economic strength. For example, Qarshi City (with a population of 300.8 thousand) and its agglomeration form the region’s main growth pole. Shahrisabz City (150.1 thousand) is considered the second-tier growth center. Both cities are not only the primary urban hubs of the province but also of the entire Southern Economic Region. On the provincial level, Muborak (35.8 thousand) and, in the near future, Guzor (30.5 thousand) are emerging as growth centers. The township of Nuriston is also likely to gain similar status, particularly due to the commissioning of the second phase of the large Tolimarjon Thermal Power Plant in 2014.

In Surkhandarya Province, the main growth centers are Termiz City (207.3 thousand) and Denov City (98.8 thousand). However, the accelerated development of these cities will depend on improving their geopolitical positioning and geo-ecological conditions (especially in Denov). Other settlements with potential for development include Boysun (35.4 thousand), Sherobod (34.6 thousand), and Qumqorgon (18.6 thousand).

The ongoing growth of these sectors will have a visible impact not only on the socio-economic conditions of the region but also on the composition and system of urbanization and the processes of urban formation. The regional differences in urbanization levels between Surkhandarya and Kashkadarya reflect the combined influence of natural and socio-economic factors and are expected to persist. Therefore, taking into account the population distribution and the socio-economic and demographic processes in Southern Uzbekistan, this study uses the extrapolation method to forecast the urban structure and urban population up to the year 2050.

For the purpose of extrapolation, the retrospective period from 1989 to 2025 was used, assuming that the demographic conditions typical of these years will largely continue in the near future and that positive migration balances in urban areas will increase. Additionally, forecasts for newly established settlements were made based on their social, economic, and demographic conditions and their population growth rates during 2009–2025.

#### 4. DISCUSSION

At present, Southern Uzbekistan comprises a total of 250 urban settlements, ranking among the leading regions in the country in terms of urban network density – second only to the Fergana Valley [12]. However, in the context of regional socio-economic development, it is not merely the presence of an extensive urban network that is significant, but rather the quality and composition of these urban settlements.

As of 2025, 134 settlements, or approximately 53.4% of all urban settlements in the region, are classified as small towns with populations up to 5,000 inhabitants. Due to anticipated population growth, the number of such small settlements is expected to decline progressively. Specifically, forecast results indicate that this category will decrease to 104 settlements by 2030, to 57 by 2040, and to just 30 by 2050 – representing only about 12% of the total (see Figure 1).

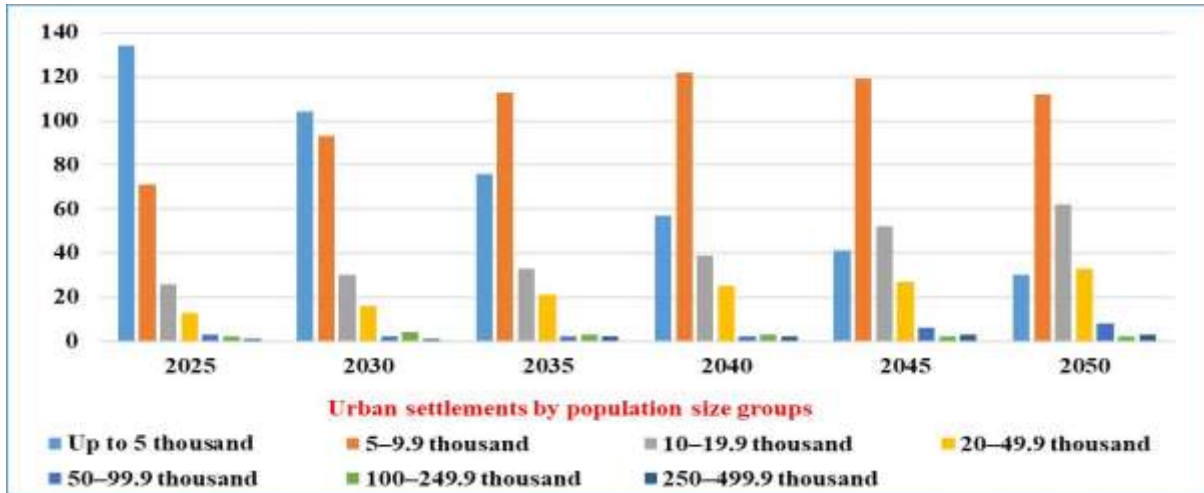


Figure 1. Projected urban settlements in Southern Uzbekistan up to 2050.

Concurrently, the population share of these settlements within the total urban population will decline significantly, both in absolute and relative terms, falling from 506,500 in 2025 to approximately 113,500 by 2050 – a decrease of nearly 4.5 times. Conversely, the second group – settlements with populations between 5,000 and 9,999 – is projected to nearly double in both number and population size, increasing from 70 settlements to 112 and from 465,700 residents to 837,500 by 2050. Over the forecast period, about 92 settlements currently in the first category are expected to move into this second group, although around 50 settlements are projected to leave this category as they grow into larger urban centers. Notably, the share of this group within the total urban population will remain relatively stable, increasing only slightly from 17.7% to 17.8%.

The third group comprises settlements with populations between 10,000 and 19,999. In the region, this number is forecast to grow from 26 in 2025 to 30 by 2030, 38 by 2040, and 62 by 2050. Some settlements with currently low growth rates – such as Miroqi, Ozod Vatan, Xalqobod, Nishon, and Shargun – are expected to remain in this group by 2050. However, other settlements in this category, including Qumqorgon, Nishon, Qiziriq, Dehqonobod, Muzrabot, Uzun, and Sariosiyo – which serve as district centers – are likely to grow into semi-medium towns due to the expansion of district service sectors. By 2050, it is anticipated that 12 settlements from the first group and 45 from the second group will transition into this category.

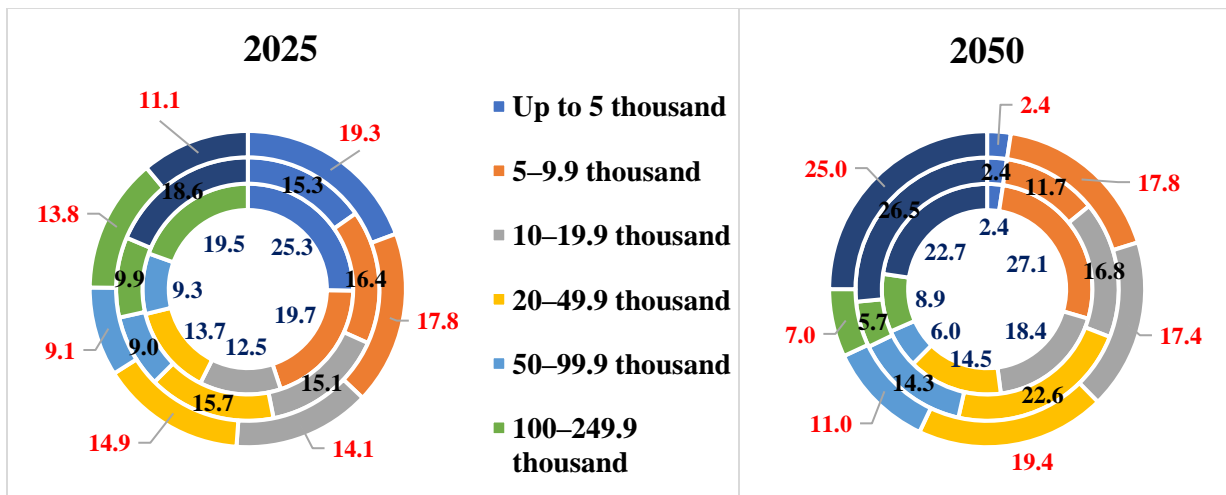


Figure 2. Distribution of the total urban population in Southern Uzbekistan, Kashkadarya, and Surkhandarya provinces by urban settlement groups for 2025 and 2050 (percentage of total)

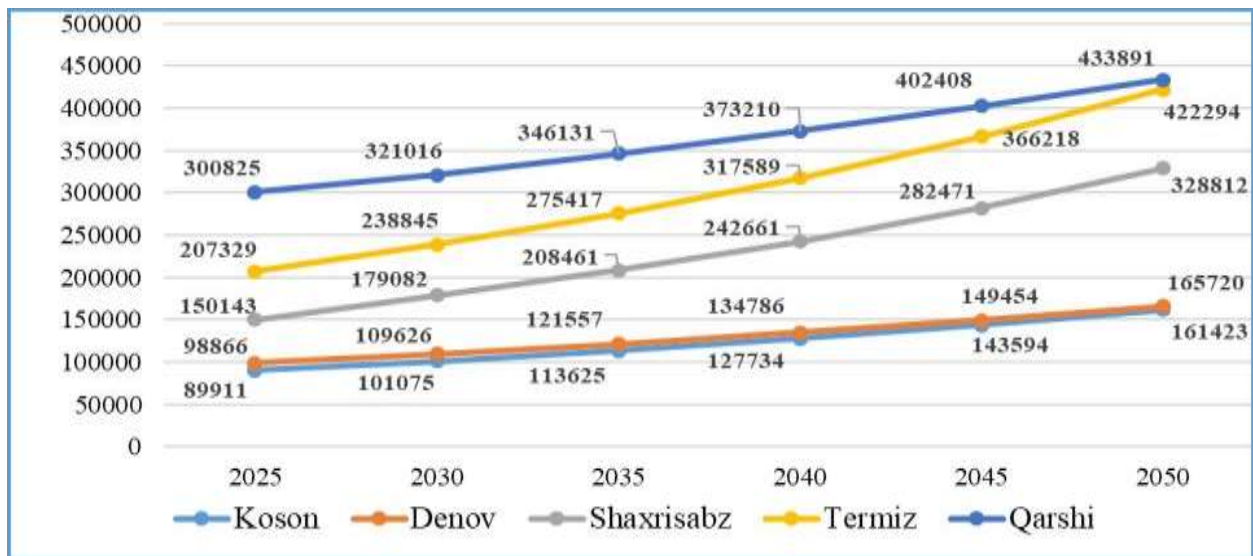
**Note:** The outer ring represents Southern Uzbekistan; the middle ring shows Kashkadarya Province; and the inner ring shows Surkhandarya Province.

The forecast further reveals significant transformations within the core of the region’s urban structure, specifically within the “semi-medium” (20,000–49,999 residents) and “medium” (50,000–99,999 residents) towns. The number of semi-medium towns is projected to increase steadily from 13 in 2025 to 32 by 2050 – an average addition of about one new semi-medium town per year. Settlements such as Denov, Ayritom, Oq Oltin, Qiziltepa, and Paxtaobod, which currently have populations below 10,000, are expected to join this group in a short period, driven by the region’s high demographic growth rates.

In general, during the forecast period, the contribution of semi-medium towns to the total urban population is projected to rise from 14.9% to 19.4%. By 2050, this group is expected to comprise approximately 25% towns (e.g., Guzor, Sho’rchi, Beshkent, Jarkurgon, Yakkabog’, Qumqorgon, Yangi Nishon, Tolimarjon) and 75% urban-type settlements. This suggests that for some settlements with high growth potential, it will be necessary to strengthen their economic and social infrastructure, reconsider their administrative status, and reclassify them officially as towns.

The medium towns category – which currently includes Denov, Koson, and Kitob – is expected to expand by 2050 to include Qamashi, Kitob, Muborak, Boysun, Chiroqchi, Sherobod, as well as urban-type settlements such as Xonobod and Maymanoq (see Figure 2).

At the upper end of the urban hierarchy, the category of large towns with populations between 100,000 and 249,999 presently includes Termiz (207,300) and Shahrissabz (150,100). According to projections, this group’s combined population will fluctuate as Termiz and Shahrissabz transition into the major cities category (over 250,000 inhabitants) at different points in the forecast period – Termiz by 2032 and Shahrissabz by 2042. Meanwhile, Denov and Koson are expected to enter this category in 2026 and 2030, respectively. For about two decades, no additional towns are projected to join this group, and by 2050, its share of the total regional urban population is expected to decline by half – from 13.7% to 6.9%.



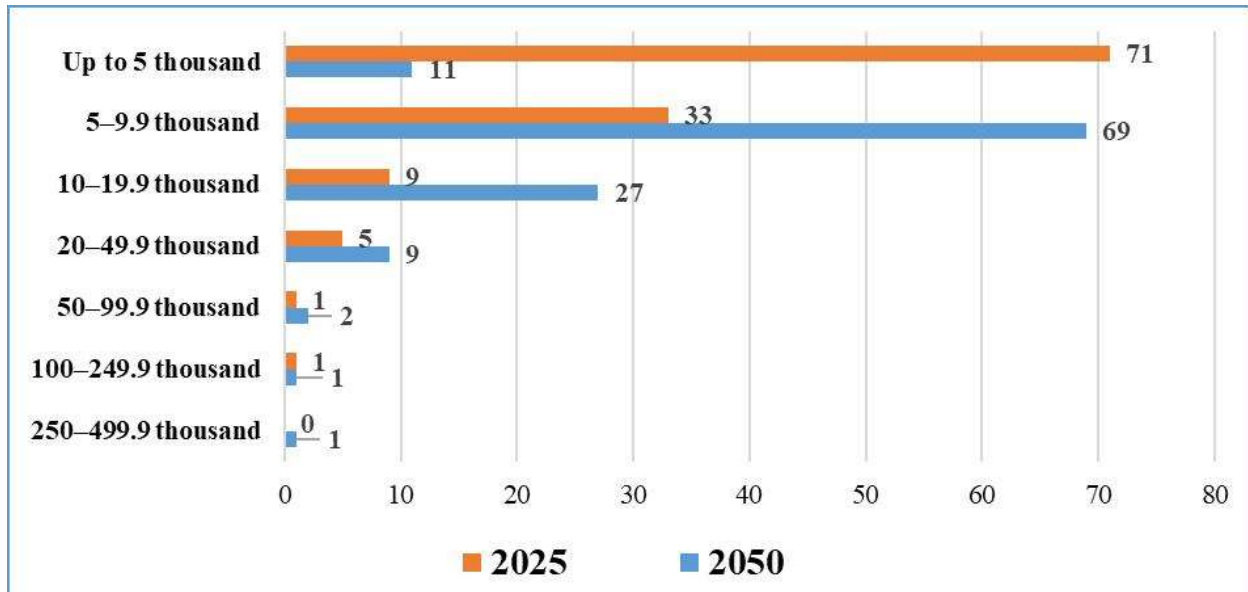
**Figure 3. Projected population of major cities in Southern Uzbekistan (2025–2050)**

Currently, Qarshi stands as the sole major city in the region, with a population of 300,800 as of January 1, 2025. As Termiz and Shahrissabz attain major city status within the forecast period, the region’s large city group will become more robust. By 2050, it is projected that Qarshi (433,900), Termiz (422,300), and Shahrissabz (328,800) will collectively house approximately 1,185,000 residents (see Figure 3). Consequently, the share of the large cities group within the total urban population of Southern Uzbekistan may rise significantly, from 11.5% to 25.2%.

According to the calculations, throughout the forecast period, noticeable differences in urban structure are expected to persist between the provinces within the studied region. For example, as of January 2025, Surkhandarya Province’s urban network consists of 120 towns and urban-type settlements. Although no major changes are anticipated in the total number of urban settlements during the forecast period, significant transformations are expected in their population size distribution groups.

As can be seen from the data in Figure 4, the population and number of nearly all categories of settlements within the province’s urban structure are projected to increase in the future. Only the settlements with populations up

to 5,000 inhabitants are expected to decrease sharply – from 268.2 thousand in 2025 to approximately 45.0 thousand by 2050, a reduction of almost sixfold. This is because the high natural population growth in these settlements will cause about 85 percent of them to move into higher population size categories. Conversely, the group of settlements with populations of 5,000 to 9,999 inhabitants is projected to become the dominant category within the province's urban network. Specifically, by 2050, their share in the total number of urban settlements will increase from the current 27.5 percent to 57.5 percent.



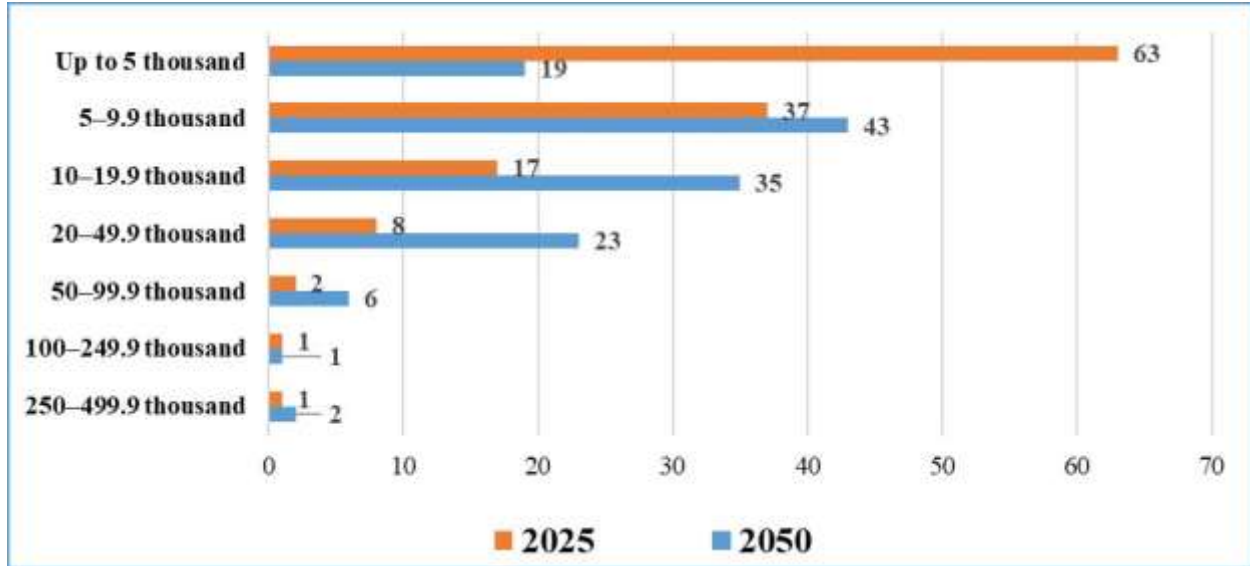
**Figure 5. Forecast of the urban composition in Surkhandarya Province for the period 2025–2050**

In the future, settlements such as Qurama, Khojasoat, Uzun, Sariosiyo, Sariq, Angor, and the town of Qumqorgon – all of which have high natural population growth rates – are expected to move into the group of urban settlements with populations between 20,000 and 49,999 inhabitants. Together with the towns of Sho'rchi and Jarkurgon, the total number in this category will reach nine.

Looking ahead, the medium-sized town tier of the province will likely be represented by Sherobod (51,200 inhabitants) and Boysun (60,400 inhabitants). This is because, in the near future, Denov will move into the large town category, while Termiz will become a major city. Notably, these four towns – Termiz in the south, Sherobod in the west, Boysun in the north, and Denov in the east – will function as regional hubs, forming the four main pillars of the province's urban framework. By 2050, nearly 40 percent of Surkhandarya's urban population will reside in these towns. Consequently, the hierarchical arrangement of the province's urban settlements is expected to become more structured and optimal.

During the forecast period, unique urbanization dynamics are also anticipated in Kashkadarya Province. Similar to its neighboring province, this region will see a declining trend in both the number and population of newly formed small settlements in the first population group. Compared to 2025, by 2050 the number of settlements in this category could decrease by 44, with a population reduction exceeding 170,000 inhabitants (see Figure 5). It is noteworthy that, as at present, most of these new small settlements will remain concentrated in areas with limited land resources and relatively low natural growth, such as the Shahrizabz, Kitob, and Yakkabog districts.

The increase in the number of second-tier urban settlements will mainly be driven by the establishment of new settlements in the districts covering the Qarshi Desert. In this regard, the new settlements in Kasbi, Nishon, Koson, Mirishkor, Muborak, and Chiroqchi districts – which have high levels of population concentration and natural growth – will play a crucial role.



**Figure 6. Forecast of the urban composition in Kashkadarya Province for the period 2025–2050**

By the end of the forecast period, the group of settlements with populations between 10,000 and 19,999 inhabitants will include six settlements each in the Nishon and Koson districts; five each in the Kitob and Yakkabog districts; four in the Qarshi district; two each in the Chiroqchi, Shahrissabz, Kasbi, and Muborak districts; and one in the Guzor district. The total number of settlements in this category is expected to double.

In the future, the province's "semi-medium" towns category is expected to grow steadily, with their number increasing from 8 to 23. Currently, this category includes the towns of Yakkabog, G'uzor, Beshkent, and the settlement of Qarliq (in Muborak district). By 2050, this list will expand to include new settlements from various districts: in Nishon district – Yangi Nishon, Tolimarjon, Oq Oltin, Nuriston; in Mirishkor district – Yangi Mirishkor, Jeynov, Pomuq; in Chiroqchi district – Paxtaobod, Jar, Dam; in Dehqonobod district – Qorashina, Dehqonobod; in Kasbi district – Fazli; in Denov district – Ko'kdala, Ayritom; in Yakkabog district – Eski Yakkabog; in Qamashi district – Qiziltepa; and in Koson district – Po'loti. It is important to note that out of these settlements, only five will become towns, while the remaining eighteen will retain the status of urban-type settlements. Furthermore, four towns and one settlement from this category are projected to move into the 50,000–99,999 inhabitants group.

During the forecast period, the total population of "semi-medium" towns is expected to grow from 244.6 thousand to 642.7 thousand, an increase of nearly 400 thousand. However, their share in the province's total urban population will change only slightly, from 15.7 percent to 22.6 percent.

The group of towns with 50,000–99,999 inhabitants, which currently includes only two members, will expand to six by 2050 with the addition of Qamashi, Kitob, Muborak, and Chiroqchi towns, as well as the settlements of Xonobod and Maymanoq. Moreover, by 2050, Koson is expected to be classified as a large town, while Qarshi and Shahrissabz will reach the status of major cities, together hosting about one-third of the province's total urban population.

Overall, according to the forecast results, the urban structure of Kashkadarya Province will become significantly more balanced in the near future, with a clearer hierarchical arrangement of towns and settlements.

An analysis of the urbanization level of rural districts in Southern Uzbekistan shows that currently, in Surkhandarya Province, only Angor (48.50%), Boysun (41.86%), Oltinsoy (40.17%), and Muzrabod (36.54%) districts have urbanization levels higher than the provincial average (36.13 percent). In Kashkadarya Province, only Muborak (79.41%), Nishon (59.56%), and Koson (52.47%) districts exceed the provincial average of 42.67 percent.

It is noteworthy that at the beginning of the retrospective period selected for forecasting – the year 2010 – the Sho'rchi district of Surkhandarya Province had an urbanization level higher than the provincial average. Although the change in urbanization rates between 2010 and 2025 varied quantitatively across districts, a general decline in urbanization – typical of the national trend – can be observed in Southern Uzbekistan, in both provinces and in most districts. Specifically, during this period, the national urbanization rate declined from 51.7% to 51.0%, while the regional urbanization level dropped from 40.6% to 39.75%. That is, the rate of decline in Southern Uzbekistan exceeded the national average reduction in urbanization.

**Table 1. Projected changes in the urbanization level of Southern Uzbekistan for the period 2025–2050**

№	Name of Administrative Territorial Unit	Urbanization level, %		Average Annual Growth	2030	2035	2040	2045	2050
		01.01.2010	01.01.2025						
	<b>Southern Uzbekistan</b>	<b>40,58</b>	<b>39,75</b>	<b>-0,00138</b>	<b>39,50</b>	<b>39,25</b>	<b>39,00</b>	<b>38,75</b>	<b>38,50</b>
1	<b>Surkhandarya Province</b>	<b>37,01</b>	<b>36,13</b>	<b>-0,00160</b>	<b>35,83</b>	<b>35,53</b>	<b>35,23</b>	<b>34,93</b>	<b>34,63</b>
2	Termiz sity	100,00	100,00	0,00000	<b>100,0</b>	100,0	<b>100,0</b>	100,0	<b>100,0</b>
3	Oltinsoy	39,51	40,17	0,00111	<b>40,37</b>	40,57	<b>40,82</b>	41,07	<b>41,32</b>
4	Angor	52,19	48,50	-0,01042	<b>47,33</b>	46,18	<b>45,07</b>	43,97	<b>42,92</b>
5	Bandixon*	18,86	17,94	-0,00995	<b>17,07</b>	16,24	<b>15,44</b>	14,69	<b>13,98</b>
6	Boysun	42,14	41,86	-0,00044	<b>41,76</b>	41,66	<b>41,56</b>	41,46	<b>41,36</b>
7	Muzrabot	38,31	36,54	-0,00315	<b>35,98</b>	35,43	<b>34,88</b>	34,33	<b>33,78</b>
8	Denov	36,40	35,24	-0,00216	<b>34,84</b>	34,47	<b>34,12</b>	33,77	<b>33,42</b>
9	Jarqo'rg'on	22,47	19,96	-0,00787	<b>19,19</b>	18,44	<b>17,73</b>	17,03	<b>16,38</b>
10	Qumqo'rg'on	35,09	32,42	-0,00526	<b>31,57</b>	30,75	<b>29,95</b>	29,16	<b>28,41</b>
11	Qiziriq*	26,12	26,56	0,00335	<b>27,01</b>	27,46	<b>27,91</b>	28,36	<b>28,86</b>
12	Sariosiyo	22,48	19,11	-0,01077	<b>18,10</b>	17,15	<b>16,25</b>	15,39	<b>14,58</b>
13	Termiz	30,17	31,19	0,00222	<b>31,54</b>	31,89	<b>32,24</b>	32,59	<b>32,94</b>
14	Uzun	25,34	23,23	-0,00578	<b>22,58</b>	21,93	<b>21,30</b>	20,70	<b>20,10</b>
15	Sherobod	31,83	29,83	-0,03193	<b>29,18</b>	28,56	<b>27,96</b>	27,36	<b>26,76</b>
16	Sho'rchi	37,50	34,50	-0,04083	<b>33,55</b>	32,64	<b>31,74</b>	30,88	<b>30,03</b>
17	<b>Kashkadarya Province</b>	<b>43,41</b>	<b>42,67</b>	<b>-0,00115</b>	<b>42,42</b>	<b>42,17</b>	<b>41,92</b>	<b>41,67</b>	<b>41,42</b>
18	Qarshi sity	100,00	100,00	0,00000	<b>100,0</b>	100,0	<b>100,0</b>	100,0	<b>100,0</b>
19	Shahrisabz sity	100,00	100,00	0,00000	<b>100,0</b>	100,0	<b>100,0</b>	100,0	<b>100,0</b>
20	G'uzor	24,29	23,52	-0,00215	<b>23,27</b>	23,02	<b>22,77</b>	22,52	<b>22,27</b>
21	Dehqonobod	18,89	18,99	0,00035	<b>19,04</b>	19,09	<b>19,14</b>	19,19	<b>19,24</b>
22	Qamashi	23,87	23,68	-0,00053	<b>23,63</b>	23,58	<b>23,53</b>	23,48	<b>23,43</b>
23	Qarshi	35,73	36,21	0,00089	<b>36,36</b>	36,51	<b>36,66</b>	36,81	<b>36,96</b>
24	Koson	50,82	52,47	0,00213	<b>53,02</b>	53,57	<b>54,13</b>	54,73	<b>55,33</b>
25	Kitob	38,32	37,09	-0,00217	<b>36,69</b>	36,29	<b>35,89</b>	35,49	<b>35,09</b>
26	Mirishkor	38,30	37,57	-0,00128	<b>37,32</b>	37,07	<b>36,82</b>	36,57	<b>36,32</b>
27	Muborak	79,14	79,41	0,00023	<b>79,51</b>	79,61	<b>79,71</b>	79,81	<b>79,91</b>
28	Nishon	59,93	59,56	-0,00041	<b>59,46</b>	59,36	<b>59,26</b>	59,16	<b>59,06</b>
29	Kasbi	38,80	38,66	-0,00024	<b>38,61</b>	38,56	<b>38,51</b>	38,46	<b>38,41</b>
30	Ko'kdala*	15,82	15,59	-0,00730	<b>15,04</b>	14,49	<b>13,98</b>	13,48	<b>12,98</b>
31	Chiroqchi*	28,73	28,60	-0,00227	<b>28,30</b>	28,00	<b>27,70</b>	27,40	<b>27,10</b>
32	Shahrisabz t*	23,99	24,04	0,00030	<b>24,09</b>	24,14	<b>24,19</b>	24,24	<b>24,29</b>
33	Yakkabog'	31,99	32,57	0,00120	<b>32,77</b>	32,97	<b>33,17</b>	33,37	<b>33,57</b>

\* Data for Bandixon, Qiziriq, Ko'kdala, Chiroqchi, and Shahrisabz districts have been calculated starting from the year in which administrative territorial changes occurred.

The table was calculated by the author based on data from the Kashkadarya and Surkhandarya Regional Departments of Statistics [13;14].

According to forecast results, during this time only a few districts – such as Oltinsoy, Qiziriq, and Dehqonobod (which exhibited high natural population growth even in urban-type settlements), as well as Koson, Qarshi, Shahrisabz, and Yakkabog (which benefitted from positive migration balance due to the influence of major cities), and Muborak (despite unfavorable conditions for agriculture) – experienced slight increases in their urbanization levels. In contrast, the average annual growth rate of urbanization remained negative across the rest of the districts (see Table 1).

The primary reason for this decline is the combination of two key demographic factors: the relatively high natural population growth in rural areas compared to urban areas, and a negative migration balance in many urban centers, which further suppresses urban growth.

## 5. CONCLUSION

To forecast the district-level urbanization trends up to 2050, the average annual urbanization growth rates from the 2010–2025 period were used as a basis. The forecast results, when interpreted realistically, present rather pessimistic outcomes. Specifically, if current geodemographic dynamics persist, the overall urbanization level of the region is expected to fall to 38.5% by 2050. This trend could hinder the achievement of national targets – in particular, the presidential directive aiming to raise the national urbanization level to 60% by 2030.

Therefore, it is essential to implement proactive urbanization policies, especially in rural districts. This includes expanding housing stock and infrastructure in towns and small urban settlements, improving public services, creating new jobs in industry and services, and encouraging positive migration toward urban areas. These measures will help increase the urban population and support the region's alignment with national urban development objectives.

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