DUSHANBE
TAJIKISTAN
Voluntary Local Review

EXECUTIVE BODY OF THE STATE AUTHORITY OF DUSHANBE CITY

Voluntary Local Review of The City of Dushanbe, Republic of Tajikistan, 2024
The Implementation of the UN Sustainable Development Goals in the City of Dushanbe

Disclaimer

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MESSAGE FROM THE MAYOR

The capital of the Republic of Tajikistan - Dushanbe as the administrative center of the country and a reflection of the tajiks ancient civilization, with the support and care of the Founder of Peace and National Unity - the Leader of the Nation, the President of the Republic of Tajikistan, His Excellency Emomali Rahmon has radically changed its appearance, and the creative and proactive efforts of its residents and partners firmly propelled the city to a new stage of development.

The Dushanbe city, as the capital of the republic, creates conditions of political stability and decent life for the free functioning of large political, economic, scientific and cultural centers, organizations and representative offices of foreign states.

This year, within the framework of cooperation with development partners Dushanbe is the first time, presents its Voluntary Local Review on the implementation of the Sustainable Development Goals (SDGs) to achieve the global 2030 Agenda for Sustainable Development.

The beginning of the implementation of the SDGs and the concept of a smart city in Dushanbe were launched simultaneously, within the framework of the social and economic development program of Dushanbe city for the period up to 2025 and its priority areas, including the development of the education and health, culture, sports, tourism and other important infrastructures, as well as improving urban environment, providing quality housing, productive employment and digital transformation.

The Dushanbe city actively works towards the implementation of the SDGs, in particular by expanding the use of "smart" technologies and solutions, introducing smart solutions for efficient use of resources and infrastructure and is striving to become a "smart" and "green" city aligned with the SDG 11-Sustainable Cities and Communities and in general is achieving remarkable results.

The city administration consistently focuses on the principles of "city for people" and "leaving no one behind" in the implementation of its initiatives.

Taking into account the purposeful implementation of the role of the center and leading engine of digitization and innovation development in the country, in the near future, the city of Dushanbe will become a large center with "green" features, sustainable and smart, the leader of innovations and effective planning, with modern system of public services representing the country in global arena.

Taking into consideration the implementation of the necessary measures regardless of the impact of any possible risks, the complex economic and demographic situation of the world and climate change, the rapid development of the city's economy has been ensured at the level of more than 7 percent, and the inflation level has been maintained at the level of 3 and 4 percent.

One of the primary goals of the city policy is to improve the quality of life of the capital's residents and guests and to provide decent living conditions based on the economic growth and progress of its priority sectors.

Therefore, we aim to reduce the poverty rate to 10% by 2030 and to increase the share of the middle class to 50%.

There are many such results and achievements in the city administration activity, and they are fully reflected in the Voluntary Local Review of Dushanbe with accurate analysis and justification.

Dear colleagues, friends and esteemed partners,

The current conditions of the world prove that to achieve smart and sustainable cities by taking into account small and big plans, it is necessary for each of us to build joint cooperation and partnerships to promote the global goals with strong willingness, creative power and rich experience to further improve the future of cities, and to take useful and timely measures using all available opportunities.

The Dushanbe city, the capital of the Republic of Tajikistan, invites you for long-term, purposeful cooperation and expresses its readiness in this direction.

Rustami Emomali
Mayor of Dushanbe city

Dushanbe's participation in the global Voluntary Local Review (VLR) movement places it among 256 local and regional government worldwide, working to localize the Sustainable Development Goals (SDGs) in 2024. The number of VLRs is growing exponentially around the world, with these cities representing diverse communities and perspectives. Dushanbe's VLR uniquely captures the city's progress across 7 SDGs, offering a holistic view of its development journey and identifying opportunities for growth. This work provides a strategic framework for the city's future, ensuring that local priorities and needs are effectively addressed.

We are thrilled to celebrate Dushanbe's achievement in spearheading sustainable development efforts by completing the first VLR in Tajikistan. This review represents the culmination of an inclusive, data-driven process, bringing together a wide range of local voices, supported by the United Nations Human Settlements Programme (UN-Habitat), the United Nations Department of Economic and Social Affairs (UNDESA), the United Nations Economic Commission for Europe (UNECE) and United Cities and Local Governments (UCLG). At the country level, the United Nations Resident Coordinator's Office (UNRCO) and United Nations Development Programme (UNDP) in Tajikistan were instrumental in accessing the critical city officials, managing the engagement and collaboration and ensuring continued implementation of participatory actions towards achieving the objectives of the VLR.

Tajikistan is already making commendable efforts to not only nationalize but also localize the SDGs by increasing the integration of SDGs into local development programmes and the involvement of local stakeholders in the formation SDG aligned budget priorities. With this strong foundation already in place, the VLR process stands to enhance this approach by creating an evidence base for strategic long-term planning. The VLR was built on the foundation of the Action-Oriented VLR Methodology, developed by UN-Habitat and UCLG, and goes beyond an assessment. The review outlines concrete steps and policy recommendations that are aligned with Dushanbe's broader development strategy.

What makes Dushanbe's approach stand out is its emphasis on gathering primary data. By launching an online survey, the city directly engaged with its citizens to collect real-time feedback, allowing for a more accurate reflection of local issues and development priorities. This commitment to data-driven decision-making ensures that the review is deeply rooted in the realities faced by residents and sets the city on a

path to informed, community-centered policy-making.

We sincerely thank the city authorities, community members, and national institutions for their efforts in making this VLR a reality. The participatory approach, with the online survey as a core element, enabled Dushanbe to harness the insights and aspirations of its residents, ensuring that the final review reflects the diverse voices and needs of the city. Furthermore, the collaboration between local and national authorities has established a strong platform for ongoing SDG implementation in Tajikistan.

As we celebrate this milestone with Dushanbe, we look forward to seeing other cities in Tajikistan and the region draw inspiration from this process. The lessons learned and the unique methodology of citizen engagement will undoubtedly be a valuable model for others striving for sustainable urban futures.

Sincerely,

Parvathy Ramaswami, United Nations Resident Coordinator in Tajikistan

Lenni Montiel, United Nations Development Programme (UNDP) Resident Representative in Tajikistan

Shipra Narang Suri, Chief, Urban Practices Branch, United Nations Human Settlements Programme (UN-Habitat)

Paola Deda, Director, Forests, Land and Housing Division, United Nations Economic Commission for Europe (UNECE)

Emilia Sáiz, Secretary-General, United Cities and Local Governments (UCLG)

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ABBREVIATIONS

TSA	Targeted social assistance
ASPRT	Agency on Statistics under the President of the Republic of Tajikistan
WHO	World Health Organization
WO UCLG	World Organization of United Cities and Local Governments
GRP	Gross regional product
SUE	State unitary enterprise
PPP	Public-private partnership
VLR	Voluntary local review
VNR	Voluntary national review
UNECE	United Nations Economic Commission for Europe
HUS	Housing and utility services
ICT	Information and communication technologies
CPI	Consumer price index
IT education	Training of professional personnel in information technology
EPA	Executive Public Aauthorities
HDI	Human Development Index
IAC	International Assembly of Capital and Major Cities
TjDHS	Tajikistan Demographic and Health Survey
SME	Small and medium enterprises
IOTC	International Organization of Twin Cities
NCDs	Non-communicable diseases
NDS-2030	National Development Strategy of the Republic of Tajikistan for the period up to 2030
NSED-2030	National Strategy for Education Development of the Republic of Tajikistan for the period up to 2030
UN-Habitat	United Nations Human Settlements Programme
LE	Life expectancy
PHC	Primary health care
RT	Republic of Tajikistan
HPS	Heating and power station
MMR	Maternal mortality rate
SDG	Sustainable Development Goals
ISO 9001-2015	International Standard based on quality management principles
PM2.5	Indicator of the presence of suspended particulate matter (dust, etc.) in the air, less than 2.5 microns (0.0025 mm) in diameter.
WTCF	World Tourism Cities Federation
COVID-19	Coronavirus infection 2019
SIP	Session Initiation Protocol, data transfer protocol

The Republic of Tajikistan is actively advancing in the implementation of the **Sustainable Development Goals (SDGs)**. This is showcased by the Voluntary National Reviews (VNRs) of progress towards achieving the SDGs, presented by the country at the High-Level Political Forum on Sustainable Development. Tajikistan has already submitted two VNRs, including the second review presented in 2023. In addition to summarizing the SDGs, Tajikistan's VNR for 2023 reflected the role that transformations in the green economy can play in helping the country achieve the SDGs. These objectives are covered by the **Mid-Term Development Programme of the Republic of Tajikistan for 2021-2025 (MTDP 2021-2025)**, which is the second stage of the implementation of the **National Development Strategy of the Republic of Tajikistan for the period up to 2030 (NDS - 2030)**. The Government of the country bears the primary responsibility for planning and implementing the SDGs. At the same time, the implementation of global goals is impossible without appropriate actions at the local level. The introduction and implementation of the SDGs at the local level is an important condition for achieving the Global Goals worldwide.

Currently, the Republic of Tajikistan is in an active phase of SDG localization, which ensures the connection of the global SDGs with local goals and actions.

At the same time, localization ensures the promotion of objectives, information, resources and actions in two interconnected and complementary directions:

- Global goals and indicators are considered at the local level; local authorities and residents determine how they can contribute to the implementation of these objective in their region (the corresponding impulses come *"from the top down")*;

- Progress and initiatives at the local level are included in the national and global agendas (the corresponding impulses come *"from the bottom up"*).

Potentially, cities and administrative-territorial districts are the platforms, where the "top-down" and "bottom-up" flows, as well as goals and resources are connected.

At the same time, Voluntary Local Reviews (VLRs) provide an opportunity to review the progress of SDG implementation at the local level. The VLRs complement the VNR, providing a more detailed and nuanced assessment of progress in implementing the 2030 Agenda at the country level. It should be emphasized that it is the VNRs that provide an opportunity to significantly accelerate the adaptation of the SDGs to local conditions. At the same time, responsibility for achieving the SDGs and related targets is shared between central

and local authorities.

Sustainable development of cities is one of the main goals of the global development strategy for the period up to 2030, adopted by the UN General Assembly in September 2015, and the main content of the new 20-year city development programme *(New Urban Agenda)* adopted by the world community at the Habitat III International Summit in Quito (Ecuador) in October 2016, which focuses on the implementation of the sustainable development goal of cities (SDG 11).

The Voluntary Local Review is presented in the Republic of Tajikistan for the first time. Here, the emphasis is made on the capital of Tajikistan – Dushanbe city, which plays a leading role in the implementation of the SDGs. Dushanbe is an important region of the country, setting the pace for economic, social and environmental transformations, testing innovative solutions aimed at higher, qualitative levels of development.

The advanced urbanization and rapid growth of the capital's population give grounds to predict that by 2030 the city's population will exceed 1.5 million people, consolidating its position as the largest city in Tajikistan, as well as an enterprising, modern and successful city in Central Asia.

"Leaving no one behind" is an important goal of its agenda, and this represents an important direction for action in Dushanbe. The integration of the SDGs into Dushanbe's programme documents is the basis for a comprehensive transition of urban governance to policies to achieve the SDGs.

The objective of this review is to analyze the current status and progress towards achieving the SDG indicators in Dushanbe, identify key successes and challenges in achieving them, through reflecting progress in the implementation of smart and sustainable development trajectories.

Executive Public Authorities of Dushanbe city play an important role in implementing the SDGs by developing solutions tailored to the needs of the local community and aligned with the city's development priorities.

The VLR relies on the fact that the Executive Public Authorities have specific powers and jurisdictions that differ from those of the national government, especially in areas that are critical to achieving many SDGs, such as land use planning, public transport, as well as infrastructure and waste management. This potentially provides an opportunity to build on existing practices and timely integrate the SDGs into the city's development programme.

Moreover, it was taken into account that the city's management of the 2030 Agenda allows for capacity building and testing of innovative solutions.

A modern city and its ecosystem reflect all the features of human society, including high dynamics and speed of life, widespread use of modern information technologies. The expectations of the urban population are very high, and it is important to respond to them appropriately. In this aspect, the role of modern technologies increases, which allows increasing the flexibility and sustainability of the process of growth and development of the city.

The concept of *"Smart City"* has already been included in the Social and Economic Development Programme of Dushanbe city for the period up to 2025. Ensuring the systematicity and consistency of actions in this direction can potentially contribute to the growth of the city's capabilities in solving both daily and strategic development objectives, which is very important given population growth, demand for quality life and climate change.

This is precisely why the theme for the VLR was chosen - **"DUSHANBE: SMART AND SUSTAINABLE FUTURE"**. In reflecting this theme, attention is focused on the practice and prospects for the application of innovative technologies and solutions.

The concept of smart and sustainable cities is using technology to improve public services and quality of life, while ensuring environmentally friendly development. Among other things, cities that want to become smarter and more sustainable are implementing digital solutions, improving public transport, water supply and sanitation, lighting and heating, and creating more green spaces. Cities can reduce resource consumption and improve service delivery. Cities can also use innovative and cost-effective ways to promote greater interaction with residents.

One of the key themes in Dushanbe's first Voluntary Local Review is alignment of national and local policies. The development of the first voluntary local review took into account the goals and expectations set out in the country's key policy documents:

Long-term strategic priorities and objectives reflected in the National Development Strategy of the Republic of Tajikistan for the period up to 2030, with the implementation of its second stage within the framework of the Mid-Term Development Programme in 2021-2025;

- A whole range of cross-cutting development strategies and programmes that provide a projection of long-term strategic priorities and objectives in individual areas of development, including in the area of accelerated industrialization, widespread dissemination of digital technologies, the formation of a green economy, scientific and innovative development;

- Urban mid-term strategic priorities and objectives reflected in the Social and Economic Development Programme of Dushanbe City for the period up to 2025;

- Recommendations of the 2023 Voluntary National Review on green development.

It is expected that the structure of the review itself and the information presented in it will be useful for the general public, representatives of the business and public sectors, international organizations, partners and investors who contribute to the formation of a smart and sustainable future.

At the same time, the Voluntary Local Review of Dushanbe city can subsequently motivate other cities in the country to join the UN agenda to achieve SDGs in the context of their own development.

Photo Credits: **Didor Sadulloev**

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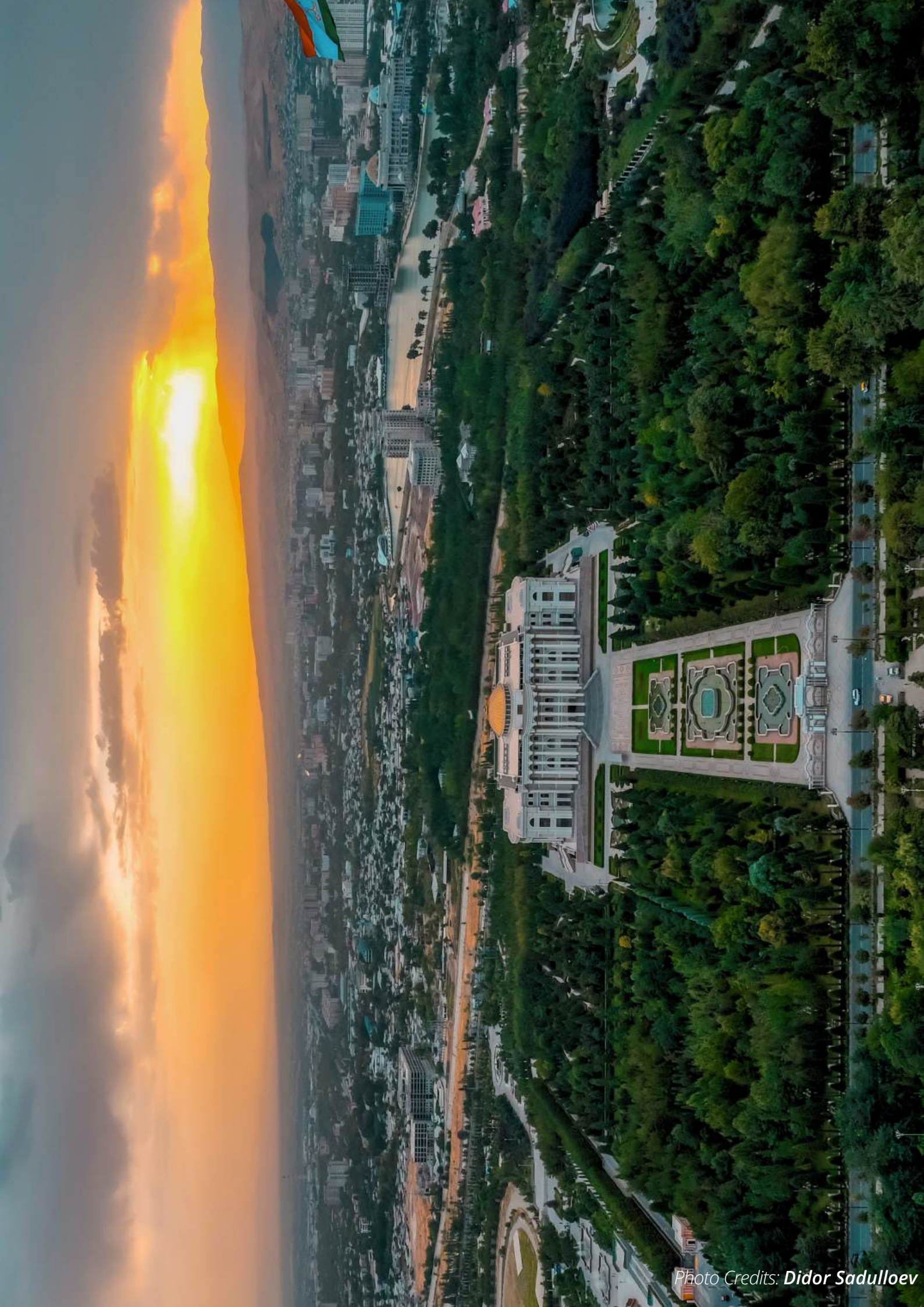
VLR Methodology and Preparation Process

The VLR focuses on the achievements and potential areas of development of Dushanbe city in implementing the Sustainable Development Goals, taking into account the creation of a bright and sustainable future.

The coordination aspects of the development of the VLR of the city were ensured within the framework of close working communications between the **Executive Public Authorities (EPA)** of Dushanbe city and the **Ministry of Economic Development and Trade of the Republic of Tajikistan (MEDT)**.

The first VLR was prepared in accordance with the international methodology for the preparation of such productsi, with the mandatory reflection of progress in the implementation of the Sustainable Development Goals in Dushanbe city.

The following guiding principles were taken into account in the process of preparing the VLR of the city:

- Focusing the VLR primarily on the sustainable and inclusive creation of *"common values"* in the interests of local communities (private sector, public and civil-society organizations, local residents);
- Ensuring that the VLR is developed with

the involvement of local communities and key stakeholders, including the private sector and academia, while creating opportunities for cross-sectoral interaction within management bodies;

- Positioning the VLR as a promising tool *(and not just a reporting mechanism for past work)*, linking it to national development priorities and objectives, including the VNR recommendations;

- Striving to use relevant indicators and benchmarks to assess progress in achieving the SDGs, drawing on opportunities for cross-sectoral cooperation. Active consultations were held with UN-Habitat specialists and materials from relevant regional forums on sustainable development[ii] were used in the process of preparing the VLR for the city. At the same time, setting development objectives and prospects for Dushanbe city within the VLR involves:

- Reflecting a range of actions aimed at aligning city programmes and budgets with the SDGs;

- Taking into account long-term and short-term actions to address key issues arising in the process of achieving the SDGs and increasing urban resilience;

- Ensuring coherence between the VNR and the VLR, in particular by establishing links at the national level and through collaboration with key actors in national processes;

- Creating value for the benefit of local communities, especially the most vulnerable groups;

- Taking into account the principle of *"Leaving no one behind"*, reflecting the needs and requirements of the most vulnerable and those most in need of assistance;

- Ensuring focus on mobilization of financial resources to implement the VLR recommendations, in particular the use of innovative financing instruments.

Cross-cutting aspects reflected in most points of the city's VLR are related to ensuring focus on gender issues and digital technologies, and smart solutions.

Fig. 1. Five phases in the VLR development process
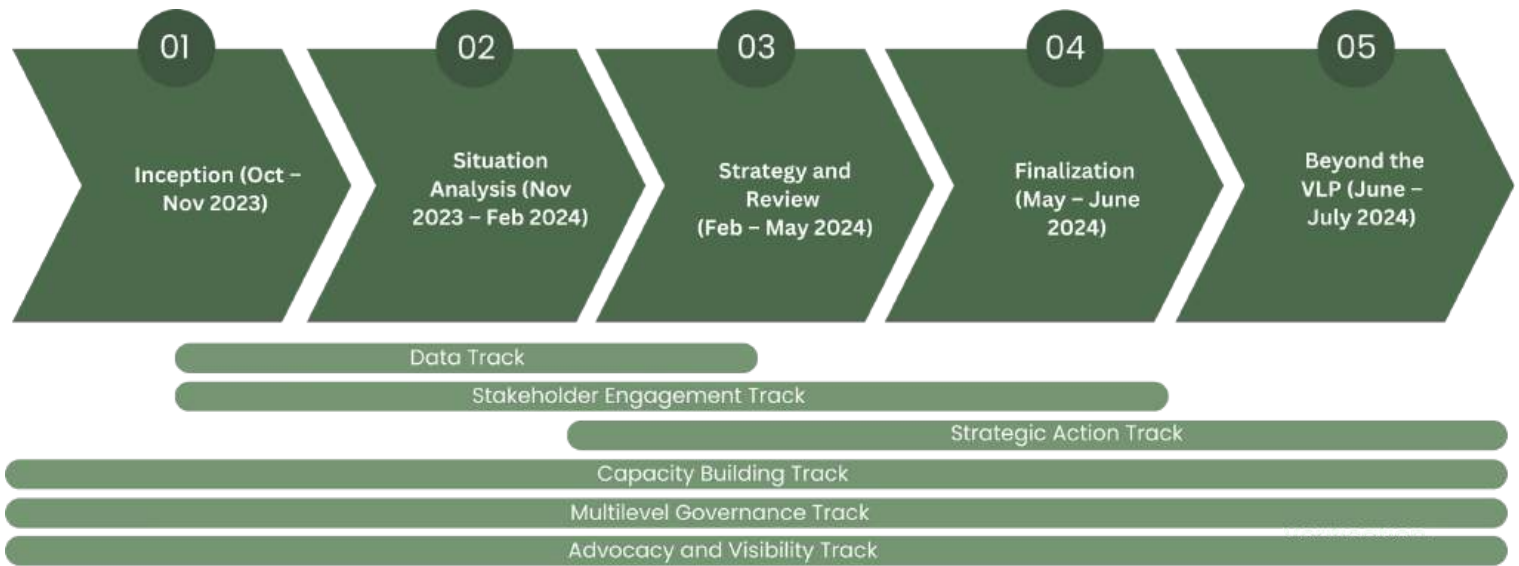
The developed VLR of Dushanbe city is based on the analysis of key development challenges, proposals and opinions of various stakeholders, results of sociological research, existing developments and other sources of assessments.

At the very beginning of the process of forming the VLR of the city, an analysis of the possibilities for collecting the information necessary for this review was conducted.

The key source of data were periodicals of the Agency on Statistics under the President of the Republic of Tajikistan (ASPRT) and departmental reports, results of various sociological studies and surveys (for example, the population census) – particularly to reflect the progress on SDG indicators. The results of the qualitative and quantitative analysis are presented in each section of the VLR of the city. In the process of developing the VLR of the city, it was important to pay special attention to the use of approaches based on factual data, in particular the use of quantitatively determined indicators that make it possible to review progress in achieving the SDGs and ensuring urban resilience.

The period for data analysis is uniform and runs through the entire VLR of the city for 2015-2023 with the designation of target forecast development indicators until 2030. However, since there is a range of areas for which data is collected periodically, including Demographic and Health Surveys (once every 4-5 years), Labor Force Survey (once every 4-5 years), Population Census (once every 10 years), which help assess progress in the development of the city, therefore, given the availability of the latest data, the results of 2017 (especially for demographic and health data) or 2020 (in particular, according to the general population and housing census) were used for some SDG indicators.

Tajikistan has already adopted a system of indicators for achieving the SDGs at the national

level. However, this has not been applied at the subnational level. National statistical reporting has only just begun to increase the capacity on collection and presentation of data on SDG indicators, broken down by regions of the country. It is important to take into account that although the number of SDG indicators available at the city level is still quite limited, they are still systematically collected, and activities are being carried out aimed at consistently increasing the capacity to collect data for SDG indicators. Accordingly, when developing the city's VLR, data limitations and the possibilities of using the recommended indicators for assessment were taken into account. In addition, the results for the existing number of SDG indicators available for Dushanbe city cannot be compared with the results for other cities in the country, since the capital's potential for generating data is significantly higher.

The VLR looks at progress on 8 out of 17 SDGs that are relevant to the specific context of Dushanbe city:

- **Goal 1:** End poverty in all its forms everywhere.
- **Goal 2:** End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- **Goal 3:** Ensure healthy lives and promote well-being for all at all ages.
- **Goal 4:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- **Goal 7:** Ensure access to affordable, reliable, sustainable and modern energy for all.
- **Goal 8:** Promote sustained, inclusive and sustainable economic growth, full and

productive employment and decent work for all.
- **Goal 9:** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- **Goal 11:** Make cities and human settlements inclusive, safe, resilient and sustainable.

An overview of the state of progress, the focus of the local executive authorities' actions, and possible smart technologies and solutions that help achieve the SDG objectives is provided for each of these goals.

At the same time, the overview of achievements in the implementation of the SDGs is considered in a thematic context, accompanied by a reflection of individual aspects of the smart and sustainable future of Dushanbe city. That is, the VLR of Dushanbe city has built a storyline for the development of the city, within the framework of which achievements and prospects are reflected, taking into account the combination of SDG initiatives and citywide objective.

To assess progress towards the implementation of the SDGs, this review used a combination of various methods, including:

- preparation of an information platform/framework for assessment and recommendations based on available data and departmental monitoring reports;
- diagnostics of progress in Dushanbe city, covering key areas and directions of smart and sustainable development;
- focus group discussions with the direct participation of civil society on a set of issues

aimed at clarifying the results, opportunities and constraints;

- identification of key areas for development acceleration, taking into account the prospects for the dissemination of smart, digital and green technologies and solutions.

Interaction with stakeholders is a key component of the preparation of the VLR of Dushanbe city. Almost immediately after the initiation of the VLR, sustainable communications were established, consultative and thematic discussions were held with various Executive Public Authorities and the civil society. In general, the Executive Public Authorities of the city took a number of measures to involve various groups and communities, including women, youth, specialists from various government agencies, academic institutions, trade unions, employers' organizations, and associations in the process of discussing various aspects of the city development. Efforts were aimed at developing a feedback mechanism and considering the needs and priorities of all stakeholders.

If at the initial stages of the VLR preparation the format of the discussions was more conceptual and aimed at raising the awareness of all stakeholders and involving them in the process of forming a vision of the prospects for the development of Dushanbe city, then as the results were summarized and urban development was analyzed, the focus of the discussions increasingly shifted to clarifying details and identifying priority objectives for smart, sustainable development.

The Consultative Forum held in March 2024, with a consolidated discussion of the content of the VLR, allowed not only to identify the opinions of various stakeholders, but also to outline the range of their views on the priorities of the city's development, the necessary direction of coordinated activities. The process of group discussions was characterized by many strengths, such as the unification of the knowledge and experience of specialists from various structures to form a common vision of prospects. The discussion was attended by representatives of government bodies (national and city levels), civil society associations, research organizations, business communities (unions and associations of enterprises), as well as individual companies.

Another element of the discussions was an online survey, which was conducted from April 29 to May 3, 2024. The online survey functioned as a digital tool for engaging stakeholders in an exchange of views. A total of 65 responses were received, with 2/3 of the participants representing civil society.

In general, the cycle of conducted meetings-discussions, focus group discussions was aimed at forming a sense of involvement in the process and its results. This process defined the vision and expectations of stakeholders on the development prospects of Dushanbe city, which is an important basis for making consolidated decisions.

2. National Conditions and Prospects for Development of Cities

2.1. Implementation of the SDGs in Tajikistan

The Republic of Tajikistan participates in global efforts to achieve the Sustainable Development Goals, consistently making efforts to improve its development indicators. The country's programme activities integrate the responsibilities on implementation of the SDGs.

Most of the goals are interconnected and mutually reinforcing, so that the solution of some tasks leads to the achievement of a number of other goals.

Adoption, localization, implementation and monitoring of the SDGs in Tajikistan. For almost the last 10 years, efforts have been aimed at nationalizing the Sustainable Development Goals.

Figure 1. Key stages in implementation of SDGs

At the same time, tools and mechanisms for tracking progress in the implementation of the SDGs are being created and developed, which are so far largely associated with the formation of a monitoring and evaluation system, consolidation of the efforts of various potential participants.

` According to the SDG Index and Panel Report for 2023, published annually by the Bertelsmann/SDSN Institute, Tajikistan ranks 89th *(out of 166 countries included in the study)*; Tajikistan's score (68.09 points) suggests that, on average, the country has covered 68.09% of the **"path to achieving the best possible result for 16 SDGs"** *(the country does not participate in the implementation of SDG 14)*[iii].

In terms of individual SDGs, the country has comparatively better indicators for **SDG 13** *"Combating climate change"* – 96.9 points, for **SDG 12** *"Sustainable consumption and production patterns"* – 91.6 points, for **SDG 7** *"Affordable and clean energy"* – 86.4 points, for **SDG 1** *"End poverty"* – 81.7 points. While relatively low indicators are observed for **SDG 9** *"Industrialization, innovation and infrastructure"* – 27.2 points and for **SDG 17** *"Partnership for achieving the goals"* – 54 points, progress has nevertheless been observed in the implementation of these SDGs in recent years.

Diagram 1. Assessment of 17 SDGs in Tajikistan for 2023

Source: https://dashboards.sdgindex.org/profiles/tajikistan
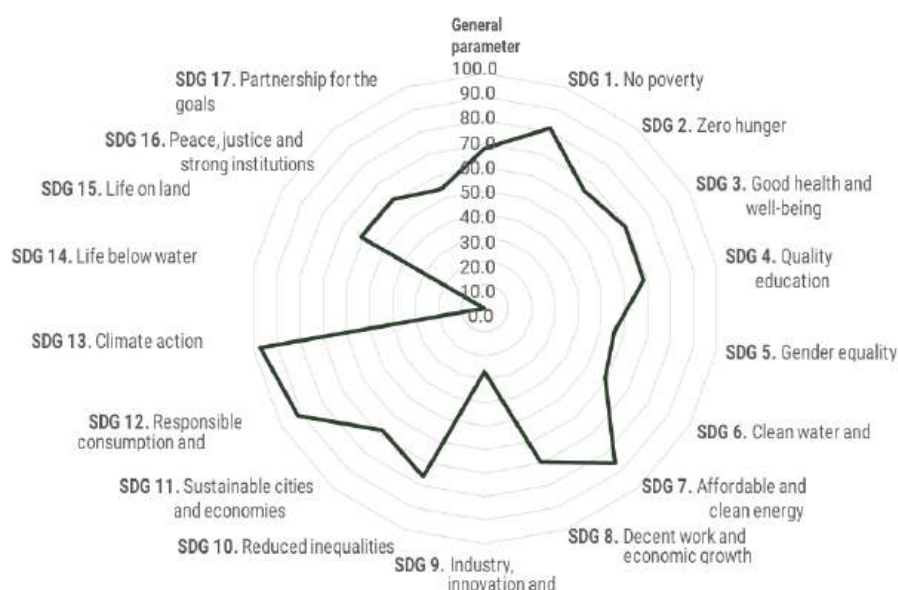
The efforts are consolidated to address the issue of expanding the capacity of statistical bodies to collect and present data for SDG assessment, including within the framework of the implementation of the National Strategy for the Development of Statistics of the Republic of Tajikistan for the period up to 2030 *(approved by Decree of the Government of the Republic of Tajikistan No. 585, of November 27, 2019)*. It is expected that the quality and availability of national data will improve within the framework of the ongoing reforms to measure progress towards the implementation of the SDGs, which will subsequently be reflected in the possibilities of disaggregating SDG indicators at the local level.

Prospects (based on lessons learned from implementing the SDGs at the country level, reflecting the results in the regions of the country) are related to the following aspects:

- Continue commitment to the Agenda

2030, as well as their main principle of ***"Leaving no one behind"*** – the price paid will increase, i.e. more efforts will be needed, if not actions are taken *(including taking into account new global challenges, demographic and environmental risks)*;

- Formation of an effective mechanism for intersectoral coordination to ensure the overall implementation of the SDGs, the interaction of economic, social and environmental factors of inclusive development;

- Promotion of the principles of prevention, industrialization and innovation throughout the vertical decision-making system, with stimulation of the increased contribution of the private sector and civil society, in general, to the implementation of the SDGs;

- Ensuring the comprehensiveness of actions, based on close cooperation with

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development partners, the private sector and all stakeholders;

- Linking SDG expenditures and budget processes at both the national and local levels, taking into account the needs of the SDGs, creating agreed financial priorities, ensuring the effectiveness of public expenditures related to the SDGs.

The contribution of Dushanbe city, as the capital of the country, a major center of economic, social and environmental activity, is significant in the achievements of the country, in implementation of the SDGs over the longer term.

2.2. SDG localization policy at local level

SDG localization is the process of implementing the SDGs at the national and local levels by aligning them with local needs. This promotes greater accountability and proactivity, ensures consistency in decision-making, improves data collection and monitoring systems, and stimulates stakeholder engagement.

Localization processes are based on SDG 11 "Make cities and human settlements inclusive, safe, resilient and sustainable". At the same time, SDG localization processes are largely aimed at building institutional capacity.
A unified approach is being developed in the country for SDG localization, which involves the participation of many stakeholders *(national and local executive authorities, associations and non-governmental public organizations, development partners)* in the following areas:

- Enhancing the integration of the SDGs into programme activities at the local level. All cities and districts in the country are covered by mid-term development programmes. Currently, programmes for 2021 - 2025 are being implemented. With the adoption of the new Law of the Republic of Tajikistan ***"On Strategic Planning and State Forecasting"*** (of July 19, 2022), the processes of developing and implementing programmes for the development of cities and districts of the country are even more closely linked to strategic priorities and objectives, and performance monitoring. The key task for the future is to strengthen the vision of sustainable local development in the pro-

grammes, which is accompanied by the integration of resources, policy priorities and areas of activity into the monitoring processes for SDG indicators. This area involves increased activity in strengthening the potential of local statistical reporting, providing assistance in strengthening the interaction of local authorities with sectoral ministries and committees;

- Increased involvement in the formation of budget priorities and holding public hearings at the local level *(in sessions of the assemblies of people's deputies of the city)*, where the assessment and setting of tasks and results is carried out taking into account the progress on SDG indicators. The Republic of Tajikistan has a practice of holding public hearings. With the adoption and implementation of the Public Finance Management Strategy of the Republic of Tajikistan for the period up to 2030 *(No. 1446, of January 31, 2020)*, the openness of budget processes, including at the local level, will increase, which will expand the possibilities of linking budget flows with the priorities of cities and districts, the expectations of local residents;

- Creation/strengthening of information platforms at the level of cities and districts of the country to cover the process of implementing the SDGs. On the one hand, there are websites of local administrations in all cities and districts of the country, which can potentially become a platform reflecting the processes of implementing the SDGs. On the other hand, there is the potential at the local level to generate assessments/voluntary reports on the implementation of the SDGs in cities and

districts, their dissemination, reflecting a range of recommendations for improving progress and solving local problems in the field of sustainable development.

At the same time, basic efforts in the country are aimed at improving data collection, developing a methodology for the implementation and monitoring of local development goals linked to the SDGs.

The city's increased capacity to collect and analyze data annually will be aimed at eliminating **"blank spots"** in parameters important for covering smart and sustainable development, including:

- Employment: employment rate, unemployment rate, long-term unemployment rate *(including by gender, reflecting persons with disabilities)*;

- Income: the share of residents whose disposable income does not exceed 60% of the national median disposable income, housing costs from total family income;

- Enterprises: the state of funds, profitability of production, innovative products;

- Housing conditions *(Internet access)*: the share of residential buildings and structures connected to a fiber-optic network, the percentage of households connected to high-speed Internet *(more than 30 megabytes per second)*, the volume and recycling of household waste;

- Infrastructure equipment: the condition and access to almost all urban infrastructure.

2.3. Urbanization process: Goals, objectives and expected outcomes

At the global policy level, urbanization is considered one of the issues of the 2030 Agenda and serves as a model programme of globalization for the development of all sectors in countries of the world. In this context, by 2030, it is necessary to provide broad recommendations for environmentally friendly urbanization and the possibility of integrated planning of modern cities and settlements with all accessible transport and public infrastructure (**SDGs 11, 6, 1 and 2**).

Diagram 2. Urbanization as a driving force in middle-income countries (results of 2023)
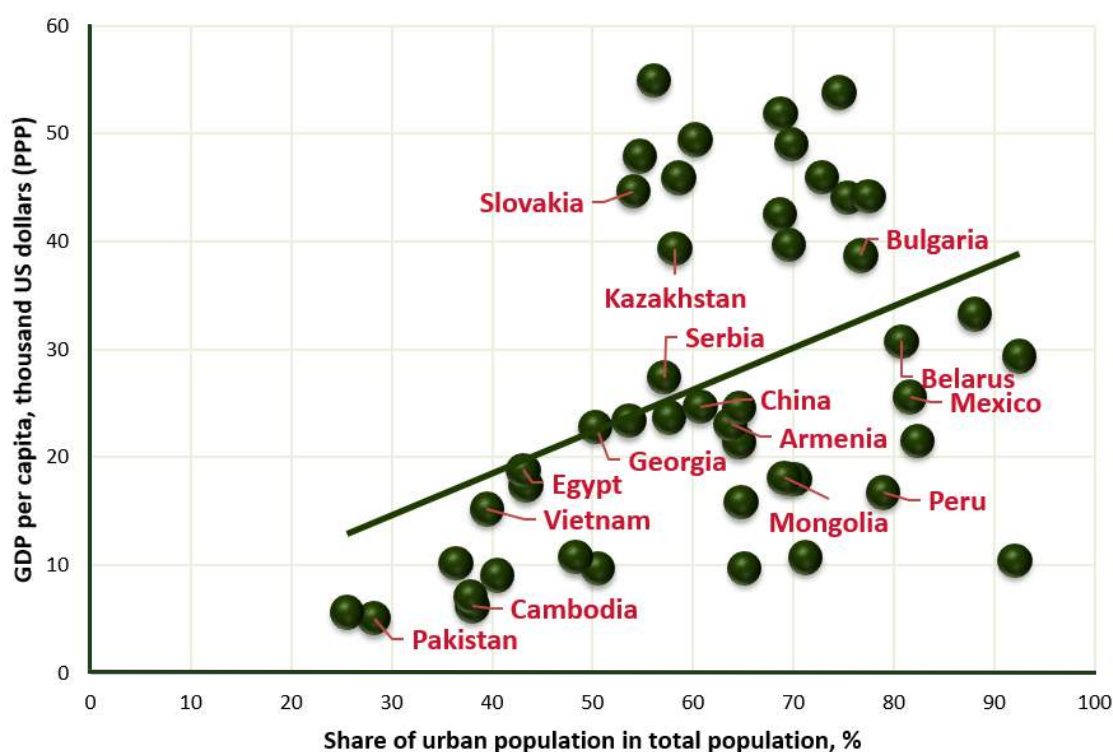
Source: Prepared on the basis of World Bank data[iv]

For the Republic of Tajikistan, this means that the potential for further growth may be associated, among other things, with the development of cities.

According to national statistical reporting, the Republic of Tajikistan has a high population growth rate, which accounted to 20.1 percent for the period from 2015 to 2023. Such rapid demographic growth contributes to the growth of cities.

The growth of urbanization processes and the growth of cities in the country can become an important area of the country's socio-economic development.

The share of the urban population is gradually increasing *(due to the growth of industrialization, internal migration, the development of small towns and the transformation of rural areas into urban settlements. This trend will increase the burden on urban infrastructure and the labor market)* and so far, it accounts for 28.8% of the total population – about 3 million people.

The total population of the four largest cities *(Dushanbe, Khujand, Bokhtar and Kulob)* makes up the majority of the country's urban population (57.1%).

Diagram 3. The number of cities and urban settlements in the Republic of Tajikistan and the share of the population living in them as of January 1, 2024

Source: Demographic Yearbook of the Republic of Tajikistan, 2023. Agency on Statistics under the President of the Republic of Tajikistan.

National estimates show that the larger the city (with a population of over 100 000), the greater is its impact on the surrounding area. As you get closer to the city, the outflow of migration from nearby areas weakens, while shuttle migration and the share of people engaged in non-agricultural labor increases.
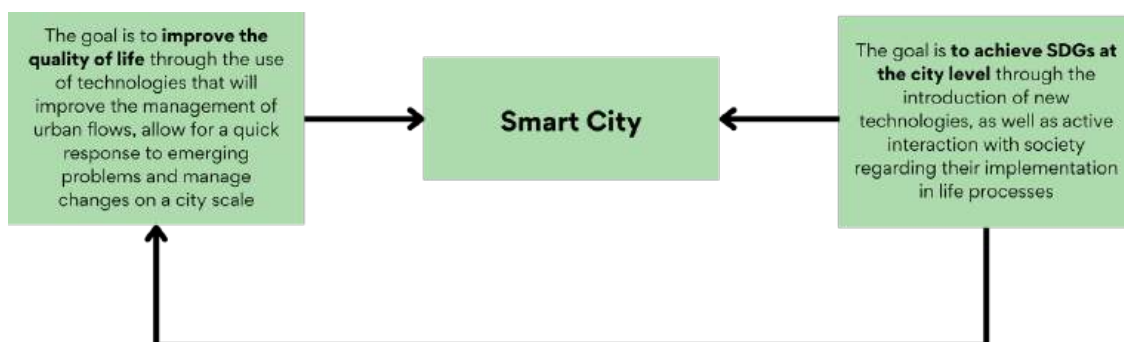
It is expected that the growth of industry and services, as well as the advantages of agglomeration, will accelerate the expansion of cities. And the factors accelerating urban development will be modern information technologies for improving public services and quality of life, while simultaneously ensuring environmentally friendly growth and development.

Box 2. Creation of smart cities is a global trend. All infrastructure and city services in such settlements operate as efficiently as possible, from the point of view of economy and environment, providing residents with as many useful services and comfort as possible.

A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social, environmental as well as cultural aspects *(definition of the United Nations Economic and Social Council).*

Fig. 2. Smart city technologies contribute to improving the quality of life and the implementation of the SDGs

The goal is to **improve the quality of life** through the use of technologies that will improve the management of urban flows, allow for a quick response to emerging problems and manage changes on a city scale

Smart City

The goal is **to achieve SDGs at the city level** through the introduction of new technologies, as well as active interaction with society regarding their implementation in life processes

Technologies of smart cities, as a rule:

- *For residents/citizens*: these are electronic public services, digitalization of public transport, online medicine and online education, tools for civic engagement;

- *For city authorities in general*: mainly smart infrastructure: monitoring and operational management of traffic conditions, public safety systems, automated metering of energy, consumed resources, environmental waste collection and disposal, smart lighting and much more.

According to some estimates, the level of use of smart technologies among residents reaches 40% in a number of capitals and large cities around the world.

The necessary components of a smart city are data recording and collection tools *(sensors, detectors, video surveillance cameras and similar devices that provide information collection – traffic, pedestrian movement, air quality, noise levels, etc.).* The digital platform is the **"heart"** of a smart city. It regulates life support and all processes within the urban infrastructure.

Investments in infrastructure, innovative technologies, collective management, as well as the frugal use of resources should contribute to improved quality of life, stable economic growth of the city, and improved environmental situation.

It is expected that in the medium term, urbanization, along with housing construction will include the development of mechanisms to stimulate industrial and innovative development of cities through the use of digital technologies, creation of productive jobs and the implementation of large investment programmes and projects.

Potentially, the national urban policy is designed to achieve better results in cities, firstly, by promoting the harmonization of sectoral strategies impacting urban areas, and secondly, by creating favorable institutional conditions.

And in this context, efforts will be aimed at creating conditions that will allow market mechanisms to direct and use resources in the most efficient way, thereby contributing to an increase in the economic effect of urban growth.

In the future, the solution to issues of resilience and security in Tajikistan will increasingly be associated with solving the problems of ensuring access of the population, including low-income groups, to high-quality housing with adequate infrastructure, as well as ensuring the environmental sustainability of cities. The relevance of the goal is also due to the fact that the country aims to continue the process of industrialization of the economy.

At the same time, relatively large cities such as Dushanbe have relatively greater potential and opportunities to achieve the greatest progress in implementing the SDGs, leadership in the application of smart technologies and solutions, and partnerships. Accordingly, smart city initiatives will contribute to achieving the SDGs:

1. The SDGs can serve as a guide for preliminary setting of smart city goals;

2. Stakeholder engagement, and especially public-private partnerships are key to both smart city strategies and sustainable development, as emphasized in SDG 17 (Global Partnership);

3. Smart city technologies and solutions will be increasingly inclusive.

Dushanbe is expected to become an innovative smart city; being the capital, the face of the country, it will simultaneously act as an experimental platform and a powerhouse that will pull innovative digital development in the rest of the country.

03

3. DUSHANBE CITY: Future Growth and Development Vision

3.1. Long-term goals of the city

Dushanbe city is implementing a comprehensive model of sustainable development, including through the implementation of its medium-term social and economic development programme for the period up to 2025. The programme should ensure the long-term prosperity of the city, improve the quality of life of citizens and improve the environment. This programme is the first fundamental regional initiative of the country, which laid down the focus of actions to achieve the SDGs at the local level. That is, localization of the SDGs at the local level is now a comprehensive approach to urban planning and management for the city administration.

Dushanbe is becoming a smart and green city. The medium-term city development programme defines priorities and policy directions to achieve sustainable growth, improve access to basic social services and living conditions, and invest in modern infrastructure. At the same time, it describes the vision of the future of Dushanbe as a city offering a good quality of life, as well as a center for science, culture, education and tourism.

Targeted development directions imply the interconnectedness and consolidation of actions of various structures and stakeholders.

Fig. 3. Targeted programme directions for the development of Dushanbe city

Development of Human Capital and Social Sphere	Smart Citizen
Economic Development	**Smart Economy**
Development of Scientific and Innovative Sphere	**Big Data, Artificial Intelligence**
Development of City Infrastructure	Smart Mobility, Smart Energy
Rational Use of Natural Resources and Ensuring Environmental Safety	Smart Environment, Smart Home
Effective City Management	Smart Government

Dushanbe city is a multifaceted city with comfortable conditions and high quality of life, a center of reforms and cooperation, an engine of innovation

The Program of Social and Economic Development of Dushanbe City for the Period up to 2025

The development of Dushanbe city as the capital and major socio-economic and financial center of the country is closely linked to national public strategies and concepts that define priorities and shape the country's development trajectories.

The National Development Strategy of the Republic of Tajikistan for the period up to 2030 is a fundamental document that defines the picture of the future and practical steps for the development of large cities and regions of the country. This document envisages the following for Dushanbe city:

- ensuring coordination and synchronization of the city development programme with sectoral development programmes/strategies;

- increasing the efficiency of the system for ensuring the quality of life and health of the population;

- strengthening institutional capacity to identify priorities, strengthen the economic base and investment climate, introduce project management, monitor and analyze the effectiveness of actions.

One of the country's priorities is the digitalization of public services and the development of e-government. Currently, the Concept of the Digital Economy in the Republic of Tajikistan and the Mid-Term Programme for the Digital Economy Development in the Republic of Tajikistan for 2021–2025, the Concept of Transition to Digital Education in the Republic of Tajikistan for the Period up to 2042 and the Strategy for the Development of Artificial Intelligence in the Republic of Tajikistan for the Period up to 2040 are being implemented. Consolidation of actions in the implementation of these strategies and development programmes contributes to the formation of the necessary conditions in Dushanbe city for the growth of digital data generation, the widespread use of the principles of sustainable and smart development.

The key target programme characteristics of Dushanbe city are related to the following areas:

- **Smart city** – the implementation of the principles and standards of smart city will increasingly include the digitalization of urban infrastructure and urban services for the population. It is planned to ensure the availability of all city services online, with the ability to evaluate their effectiveness also remotely.

- **Sustainable economic growth** – for high-quality economic development, the city will strive to create a more comfortable business environment and increase labor productivity through the development of medium- and high-tech and "green" production, and creative industries. Diversification of the city economy, attracting investment and increasing the export of goods and services will contribute to a 2-fold increase in population income and ensure a reduction in the poverty level to 10% by 2030.

- **Ensuring uniform and sustainable access of the population to various innovations in services** – health (specialized clinics, high-tech assistance), education (leading higher education institutions, language and vocational courses), technology parks, culture and recreation (theaters, museums, entertainment centers), sports (large sport facilities, swimming pools, fitness clubs).

- *Managed urbanization* – as a city, the core of the country is a key part of the agglomeration, it is the center of shuttle migration, transit passenger and freight flows, etc. Today, the city is closely connected to many processes and spheres of life. The Executive Public Authorities of Dushanbe city are taking a number of measures aimed at building a more effectively organized transport system within the agglomeration, as well as a unified waste management system with an increase in the share of recycling to 15% and a reduction in waste generation at sources to 10% by 2030.

At the same time, Dushanbe city will become a demonstration model for other cities in the country in the direction of implementing a set of actions to ensure the sustainability of urban development, accompanied by an improvement in the quality of life, including – increased preparedness for climate change through risk mapping; managing the system of green spaces and open spaces; developing standards for energy-efficient urban housing and other buildings.

Smart city technologies will be applied to various areas of the urban ecosystem, including construction, industry, transport, healthcare, education, housing and utilities.

Thanks to new technologies and solutions, it will be possible to look at urban subsystems holistically, better understand their interaction, plan and manage them more quickly.

It is expected that continuity of actions and efforts will be ensured in the following areas:

- In the short term – expanding the application of the functional urban space approach, the purpose of which is to form a compact urban model that promotes the economic efficiency of infrastructure and public services. Support will be provided for investments that improve the comfort of life and the attractiveness of urban landscapes, implementing environmental solutions and digital platforms/applications;

- In the medium term – development of a practice for elaborating a mid-term city development programme with the introduction of a system for monitoring SDG indicators, widespread application of digital technologies and solutions, increased sustainability and the introduction of circular economy approaches;

- In the long term – the formation of a diversified and connected urban economy, where the generation and promotion of innovation will become key factors in national growth and development. Dushanbe will become a major hub known for its livable, green and sustainable characteristics, innovative economy, effective planning and management structure, and the efficiency of basic public services. Successful pilot applications in the field of compact urban development, urban mobility and smart city solutions, among others, will be scaled up and optimized in policy, public investment and business practice.

At the same time, the development of the necessary skills, raising awareness and building capacity of public authorities of the city will be key to introduction and use of digital tools.

## 3.2. Vision and expectations of residents and key stakeholders

Overall, Dushanbe by 2030 is characterized as a modern green city, open for business and convenient for citizens, which occupies a leading position in Central Asia in the penetration of new technologies and knowledge into all spheres of life.

The cycle of discussions held during the preparation of the city VLR contributed to the formulation of a range of challenges and opportunities for the development of Dushanbe city in the progress of the implementation of the Sustainable Development Goals, the increased penetration of smart technologies and solutions to ensure socio-economic and environmental sustainability and the growth of the well-being of the population.

The voting conducted among stakeholders showed that the appearance of Dushanbe city is almost equally associated with the concepts of a Green, Safe, Smart City, a City of Equal Opportunities, a Cultural and Large Business Center.

Diagram 4. Expected appearance of Dushanbe city (according to a set of criteria, on a 5-point scale)
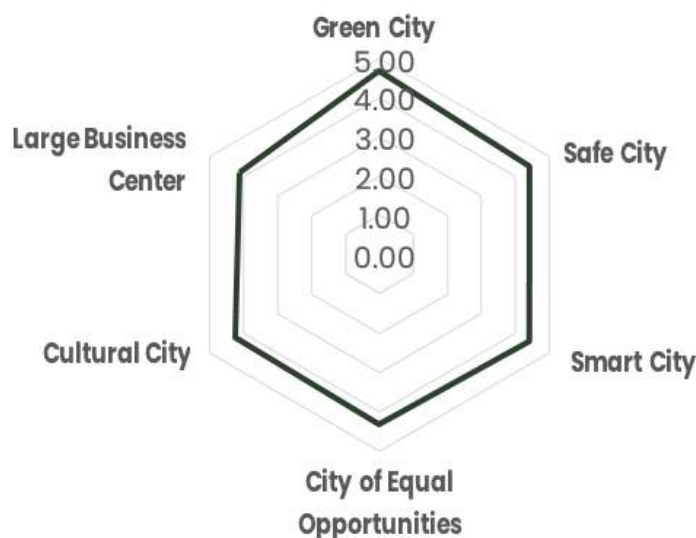
Source: Results of the voting of the participants of the Consultative Forum, March 2024. Analysis of experts involved in the process of organization and conducting discussions

With the regard to the scale of impact on well-being of the city, the participants particularly emphasized the importance of maintaining and improving the status of *"Safe City"*. At the same time, the voting results showed that combining the initiatives to form a Safe City and a Green City will contribute to the growth of the environmental sustainability of the city.

In terms of the speed of progress, the importance of implementing actions in all six conceptual areas was emphasized. However, financial resources are expected to be required to a relatively greater extent to implement the concept of a Safe City and a Large Business Center.

Diagram 5. Expected appearance of Dushanbe city (according to individual criteria for achieving the result, on a 5-point scale)
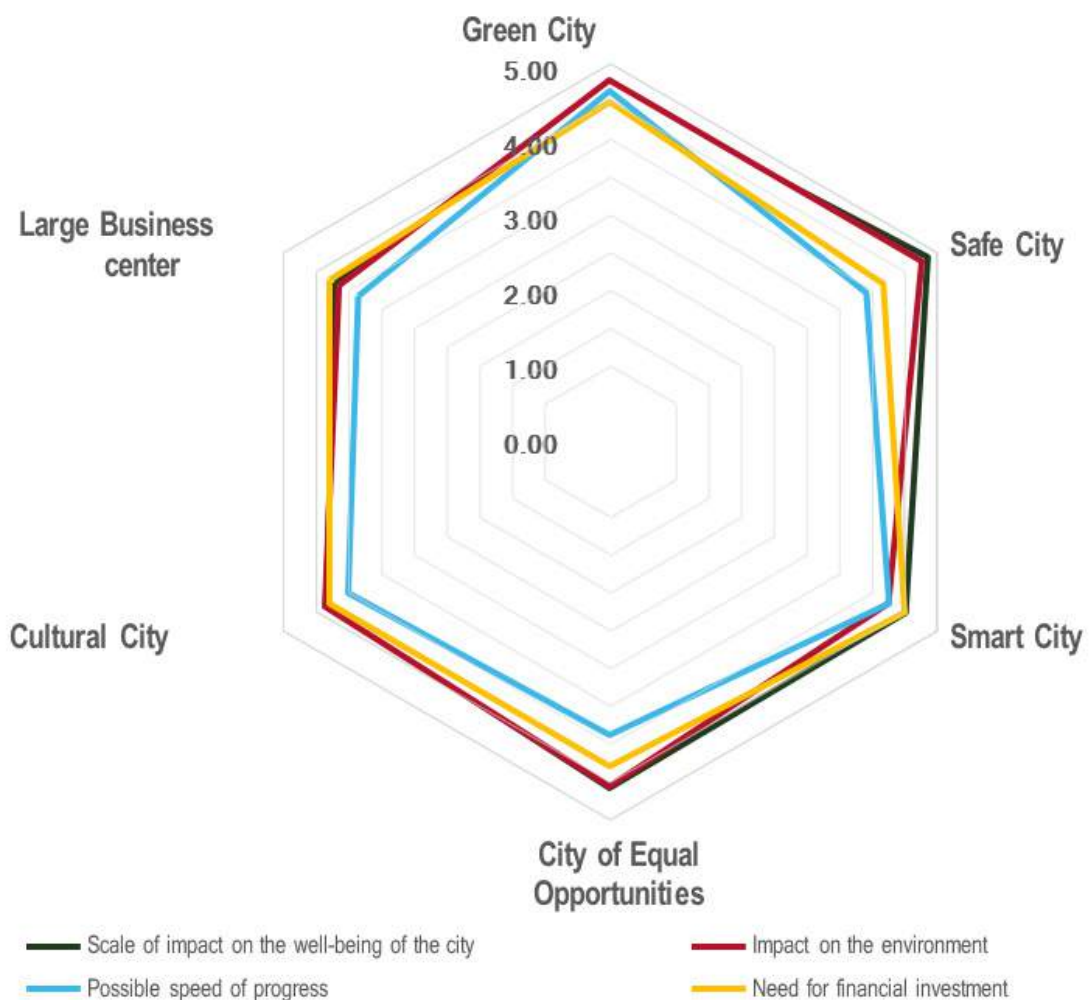

Source: Results of the voting of the participants of the Consultative Forum, March 2024. Analysis of experts involved in the process of organization and conducting discussions.

Table 1. Expected priority areas of action for detailing the Development Prospects of Dushanbe City (considering inclusiveness and sustainability)

Priority areas	Consolidated focus of actions
Human capital development (with a focus on education, healthcare and social protection systems)	Interconnected development of education and healthcare systems in the direction of ensuring access, quality and practical results with the widespread use of innovations
	Ensuring interaction between technologies and city residents, creating conditions for the widespread dissemination/use of digital technologies in the process of providing public services. Enhancing digital literacy and equipping residents with digital technologies.
	Strengthening cooperation between local administration, the private sector and the academic environment.
	Expanding the practice of corporate social responsibility.
Development of urban infrastructure (with an emphasis on transport and communications, construction, housing and utility services, electricity supply)	Application of the approach to planning a smart city based on the energy aspect, formation of an energy saving system.
	Solutions in the field of alternative energy sources as a potential source of city development.
	Ensuring the availability of transportation through public transport and the availability of parking spaces for vehicles using an intelligent approach.
	Development and monitoring of compliance with construction standards of efficient housing and modern real estate.
Improvement of the living environment (with an emphasis on the environment, ecology, access to water and sanitation)	Development of a mechanism for direct involvement of citizens in the process of forming the urban environment.
	Promoting the efficient use of water resources through meters and water-saving technologies.
	Improving the digital connection between waste management, pollution control, circular economy and the formation of an environmental culture of consumption.
Promotion of economic well-being and employment (with an emphasis on the development of the urban economy and productive employment)	The main focus is on business-oriented urban development, promoting the growth of innovative entrepreneurship.
	The introduction of intelligent technologies in the economic process should become the engine of growth of the city economy
	Reducing the administrative burden on business
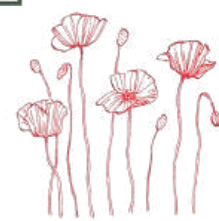
The prospects for the development of the city were associated with the expansion of the balance of interests in the economic, social and environmental spheres; new challenges and opportunities associated with climate change and digitalization.

At the same time, online discussions showed:

- As three key priorities for the development of Dushanbe city until 2030 in need of *"breakthrough"/innovative solutions, it is important to identify: "Ensuring sustainable employment and income", "Ensuring food security", "Improving urban infrastructure"* (noted by more than 70% of participants);

- Three key points of growth for Dushanbe city should be efforts to develop human capital, strengthen mechanisms to support entrepreneurial activity, and digitalize public services (noted by more than 70% of participants);

- Cohesion of the actions of various structures is expected in the area of promoting greater activity of the private sector and in general, civil society in the development of the city; raising awareness and coordinating the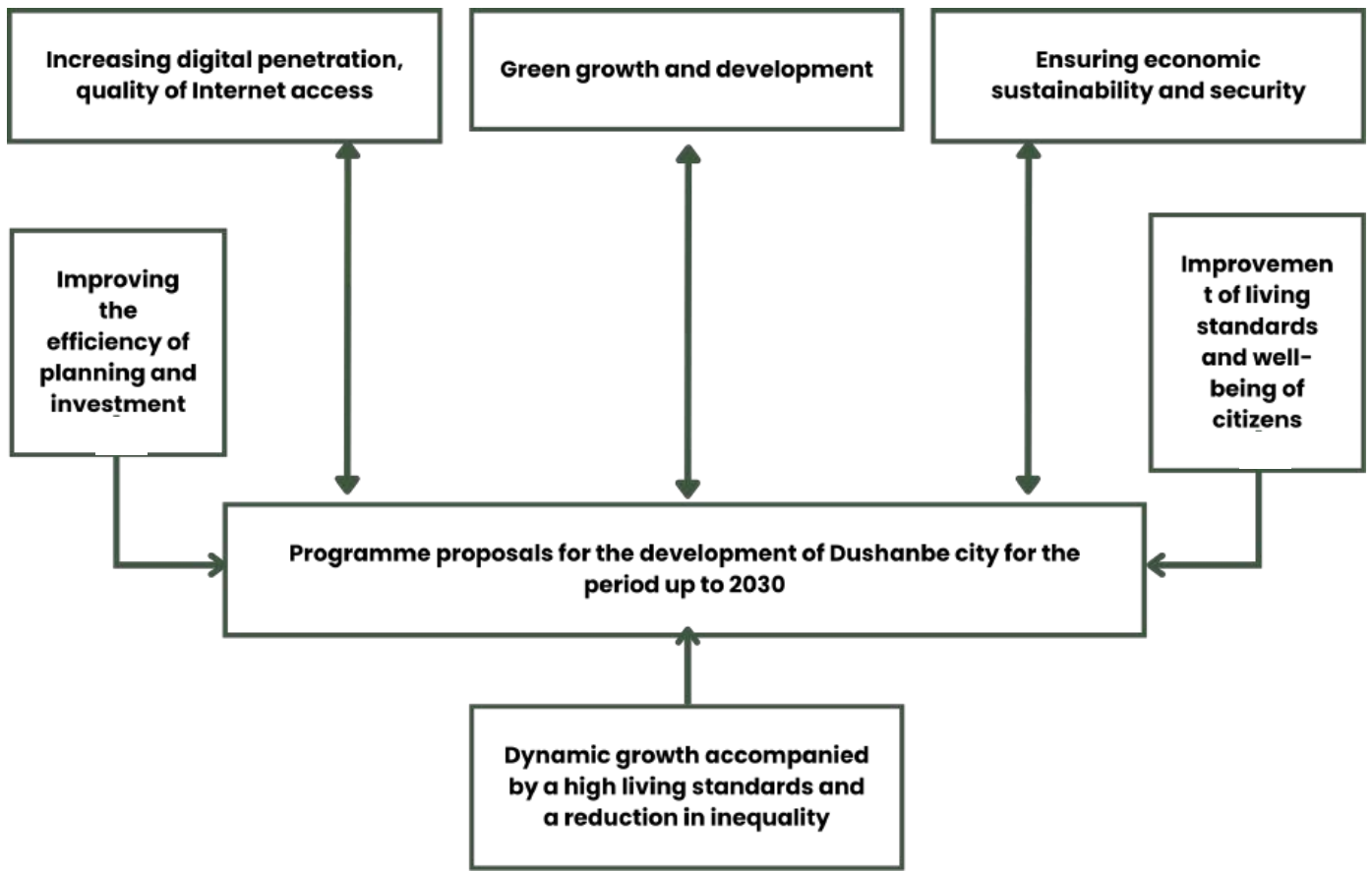 actions of various structures in the implementation of initiatives for smart and sustainable city development (noted by more than 70% of participants);

- Digital solutions and innovations should gain greater dynamism in the field of monitoring and managing various aspects of urban infrastructure, such as transport, energy, water supply and waste; e-government for the implementation of digital technologies to improve interaction between city authorities and residents (noted by more than 70% of participants);

- Expectations for the development of direct, regular and democratic participation of civil society in urban governance are more related to planning development prospects, including the development and approval of projects, especially socially oriented projects (noted by more than 70% of participants).

In general, the stakeholders associate the smart and sustainable future of Dushanbe city with the expansion of the use of smart technologies and solutions, the formation of smart skills and the development of smart urban management schemes.

Fig. 4. Vision of development prospects for Dushanbe city (based on the results of multilateral discussions)

Increasing digital penetration, quality of Internet access	Green growth and development	Ensuring economic sustainability and security

Improving the efficiency of planning and investment	Programme proposals for the development of Dushanbe city for the period up to 2030	Improvement of living standards and well-being of citizens

Dynamic growth accompanied by a high living standards and a reduction in inequality

mproving the conditions for economic well-being, digital success, environmental sustainability, and socially equal opportunities will be the key vector of development of Dushanbe city.
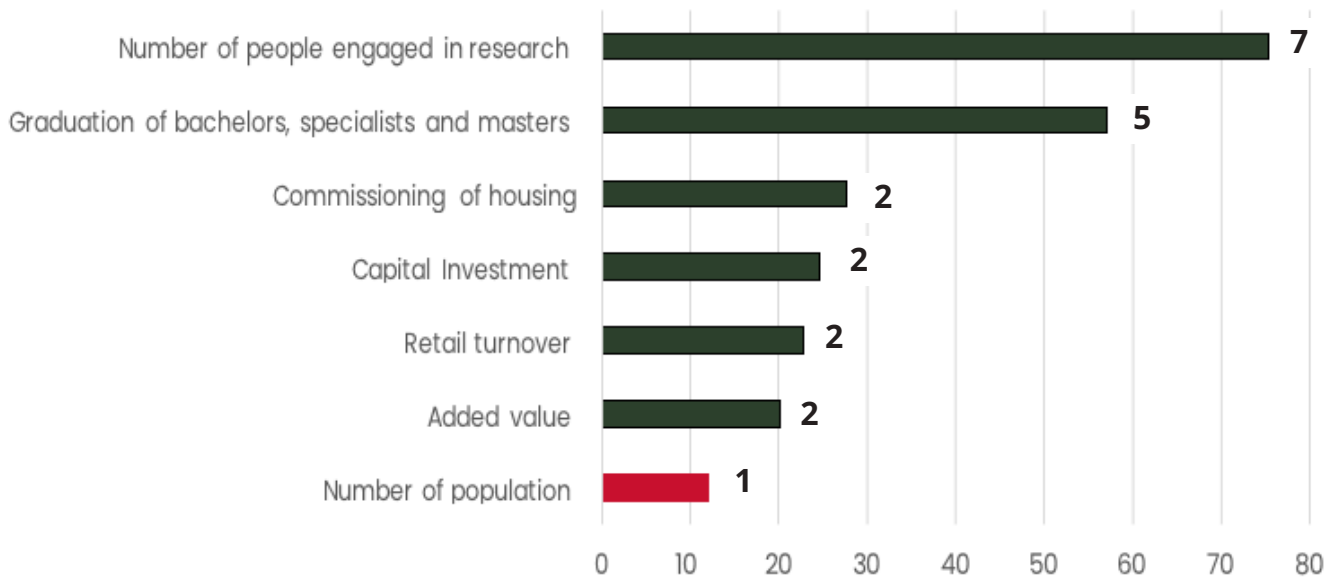
4. TRENDS AND SUSTAINABILITY OF THE CITY DEVELOPMENT

On a national scale, the features of Dushanbe are mainly determined by the status of the city as the capital of the country (the main bodies of public power and administration, foreign embassies and representative offices of various organizations are located here), the location of the largest state institutions of higher education, healthcare and culture in the city, as well as the transport infrastructure that connects the city with other states and regions of the country.

Dushanbe is the administrative, cultural, educational and scientific center of the country, and it has the necessary conditions and prerequisites for the application of smart technologies and solutions.

Diagram 6. The share of Dushanbe city in the social and economic indicators of the country, % (2023)

Indicator	Value
Number of people engaged in research	7
Graduation of bachelors, specialists and masters	5
Commissioning of housing	2
Capital Investment	2
Retail turnover	2
Added value	2
Number of population	1

Source: Agency on Statistics under the President of the Republic of Tajikistan, 2024vi

The level of development of Dushanbe city largely determines the sustainability and competitiveness of the country as a whole.

4.1. Social and demographic context and poverty reduction (SDG 1)

Over the past 10 years, the capital has demonstrated stable demographic growth: the population has grown by an average of 1.8% annually (with the exception of 2020, when the city's territory was expanded and the population of the city increased by a third).

Diagram 7. Dynamics of population growth in Dushanbe city
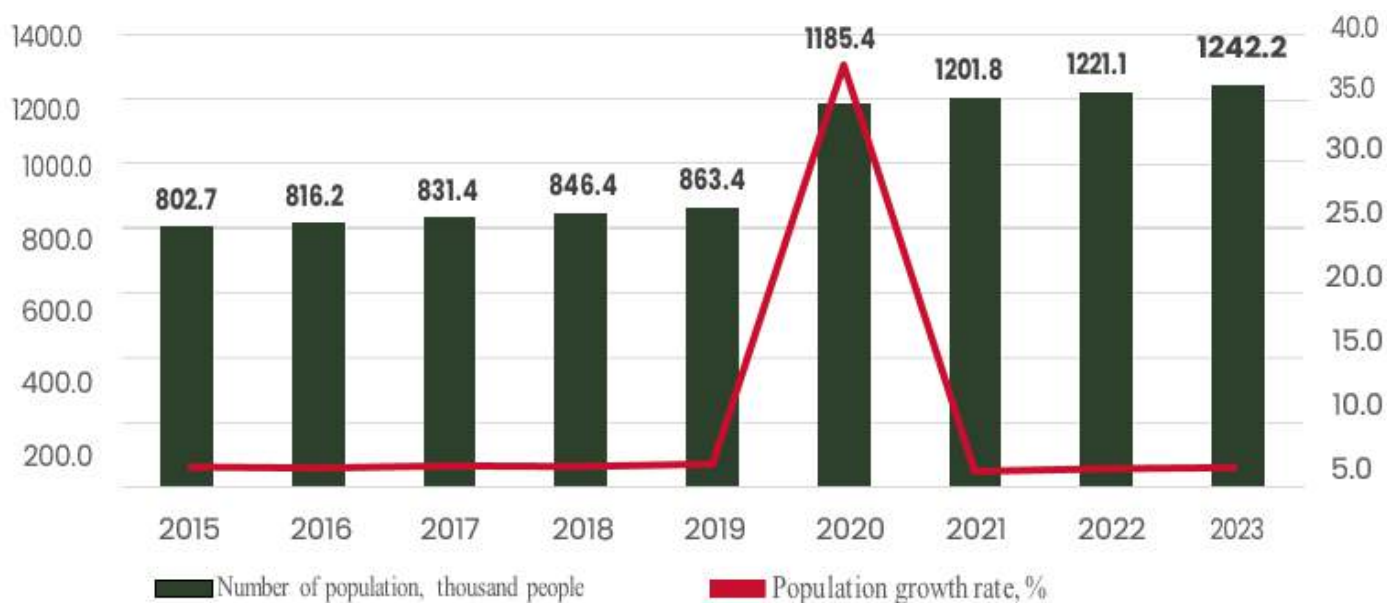
Source: Statistical Yearbook of Dushanbe city, Main Directorate of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023

The rapid population growth in the city is ensured by natural increase and internal migration of the population. The share of natural increase in the total population growth (except for 2020, when the city's territory was expanded) averages about 26%, and the balance of internal migration accounts for 74% of the total increase.

More than one million people permanently reside in Dushanbe city, but the daily load on the transport, social, housing and utility infrastructure is at least 1.5 times greater. Residents of nearby areas working in Dushanbe city, moving to permanent residence or working in the city determine the characteristics of the human potential that the city has.

The size of households in the city is smaller than the national average; there is a very slow, but still decreasing average household size.

Diagram 8. Average number of household members, person
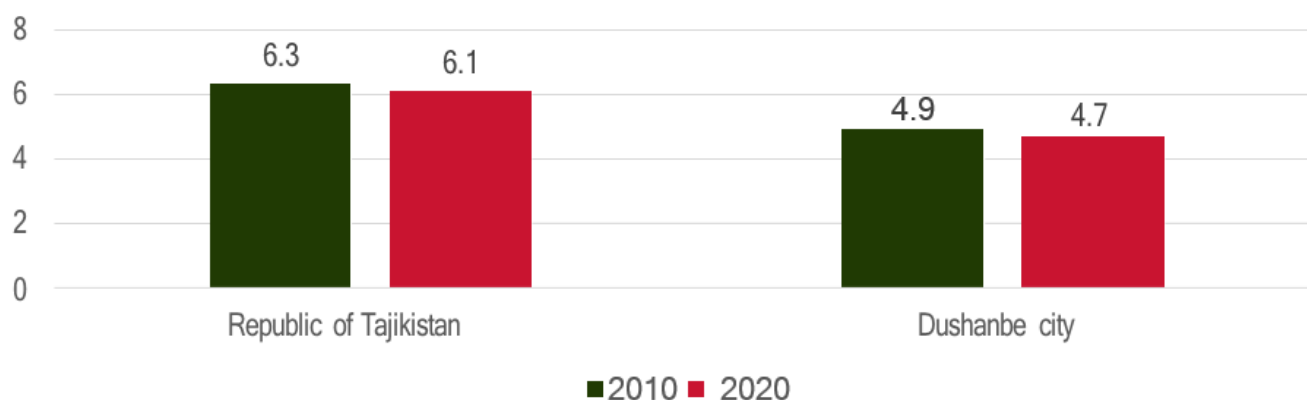
Source: Population and Housing Census of the Republic of Tajikistan 2020: Number and Composition of Households. Volume 5, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Currently, families consisting of up to 5 people (49.5%) predominate in the city; the proportion of medium and large families is increasing (largely due to the joining of nearby rural areas to the city), which is reflected in the structure of demand in the city – in relation to the size of housing, energy consumption and catering organization.

Diagram 9. Household structure in Dushanbe city, %

Ordinary Households (up to 5 people)   Medium Households (5-7 people)
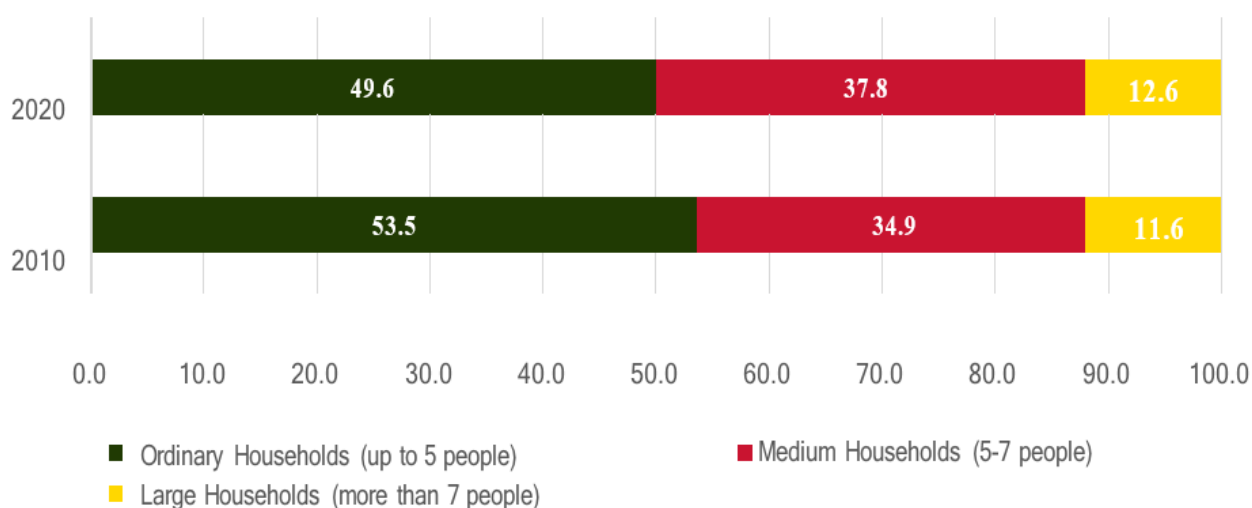Large Households (more than 7 people)

Source: Population and Housing Census of the Republic of Tajikistan 2020: Number and Composition of Households. Volume 5, Agency on Statistics under the President of the Republic of Tajikistan, 2023

In the medium term, population growth will contribute to an increase in the share of relatively medium-sized households. Due to the expansion of opportunities for improving the housing conditions of young families (with an increase in the social return on economic reforms) separating from parental families, the demand for housing in the multi-apartment segment of the city will increase.

As a result of the growth in the size of households and the changing situation on the labor market (including taking into account the joining of rural areas), the growth of average income per household member is not sustainable.

As a major economic center, the city of Dushanbe is characterized by stable positive economic development and above-average income compared to the rest of the country.

It is expected that the comprehensive actions taken, including in the rural areas that joined the city, will contribute to a more dynamic growth in the well-being of the city's population and the formation of equal conditions.

Diagram 10. Mean per capita income of households in Dushanbe city, in US dollars, per month (UMF-39)
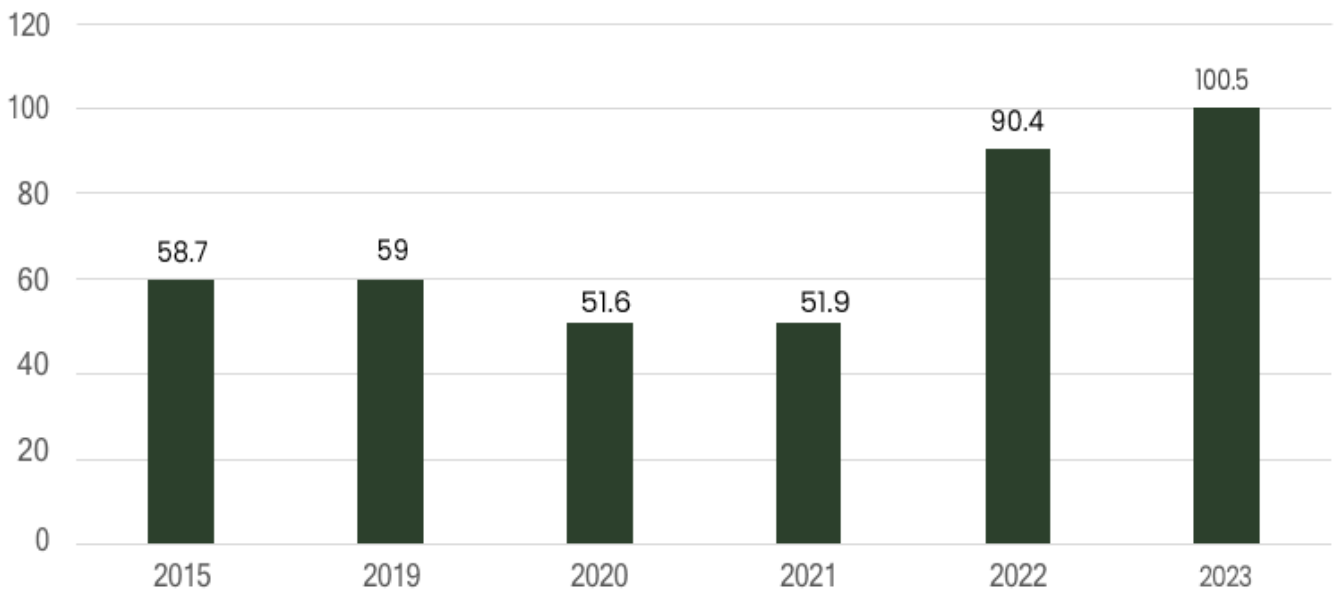
Source: Statistical Yearbook of Dushanbe city, Main Directorate of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2024

Efforts are aimed at reducing income inequality, which is inevitable due to the expansion of the city and the joining of rural settlements. This will contribute to increased access for several population groups to quality social services (education, healthcare).

High-frequency assessments from the World Bank's *"Listening to Tajikistan"* survey show that life satisfaction among the population is generally growing, which is also an indicator of progress in development. The share of respondents who indicated that they are extremely dissatisfied with their lives is not increasing, even during the COVID-19 pandemic, their share did not exceed 1%, and in 2022, the share of such responses decreased to 0.5%.

**Diagram 11. Distribution of households by assessment of general satisfaction of household members with life, %**
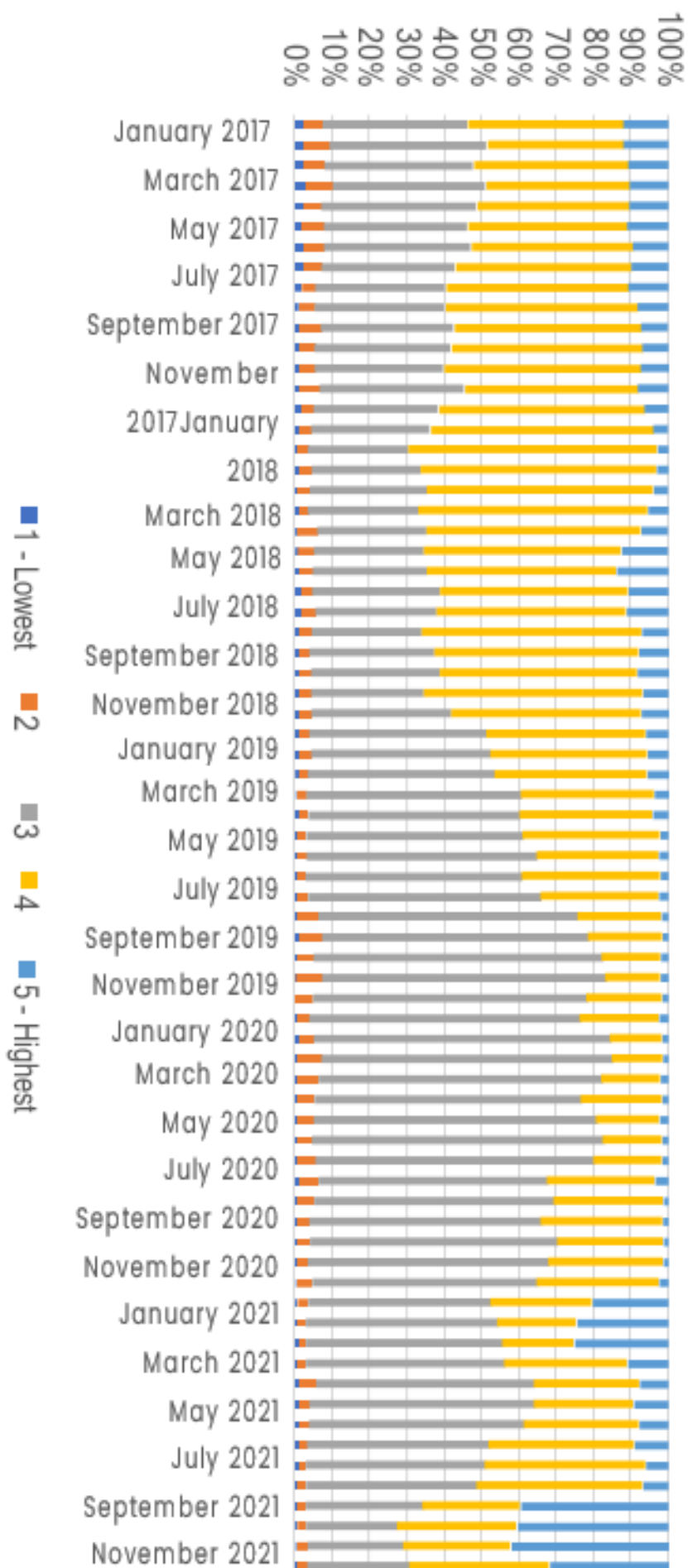
Dushanbe city remains the most developed region of the country and has a low proportion of children living in poor families. The results of the Household Budget Survey show that the poverty level in Dushanbe is decreasing. If in 2015, 20.4 percent of citizens lived below the poverty line, then by the end of 2023, this level dropped to 15.3 percent.

Diagram 12. Poverty level of the population in Dushanbe city (SDG 1.2.1), %
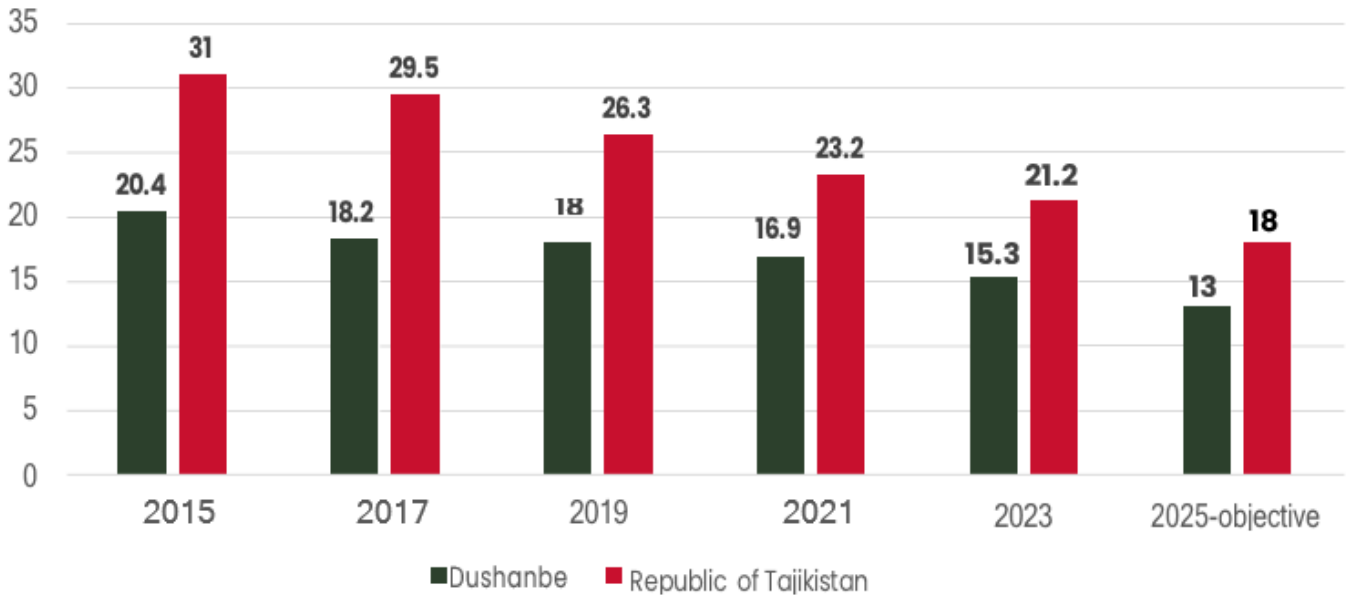
Source: Agency on Statistics under the President of the Republic of Tajikistan, 2024

The city, as well as the entire country, is implementing the Targeted Social Assistance (TSA) programme, which provides support to low-income families. Efforts throughout the programme were aimed at raising public awareness of the programme, ensuring the use of improved methods for assessing the needs of households, and creating a Unified National Information Register of Low-Income Families and Persons with Disabilities. The programme provides cash payments in the amount of 720 somoni ($66) and additional payments for each child in the amount of 72 somoni ($6.6) per year[viii], combined with benefits for the payment of medicines, utilities, and transportation costs. Overall, general actions to combat poverty are associated with the prospect of increasing support for the formation of inclusive business models, stimulating structural reforms aimed at productive employment and social sustainability.

Given the expected population growth, smart technologies and solutions should be aimed at increasing the social orientation of the economy, increasing the social return on economic growth, and reducing social inequality.

According to demographic forecasts, the population of Dushanbe city will exceed 1.5 million people by 2030. The growth of the city's population will be impacted by the continuing natural and migration growth of the population, as well as the planned expansion of the territory at the expense of nearby rural areas. Special attention will be paid to the policy of territorial development of Dushanbe city in the context of changes in the territorial-spatial and administrative configuration of the city.

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Diagram 13. Territory of Dushanbe city, thousand hectares
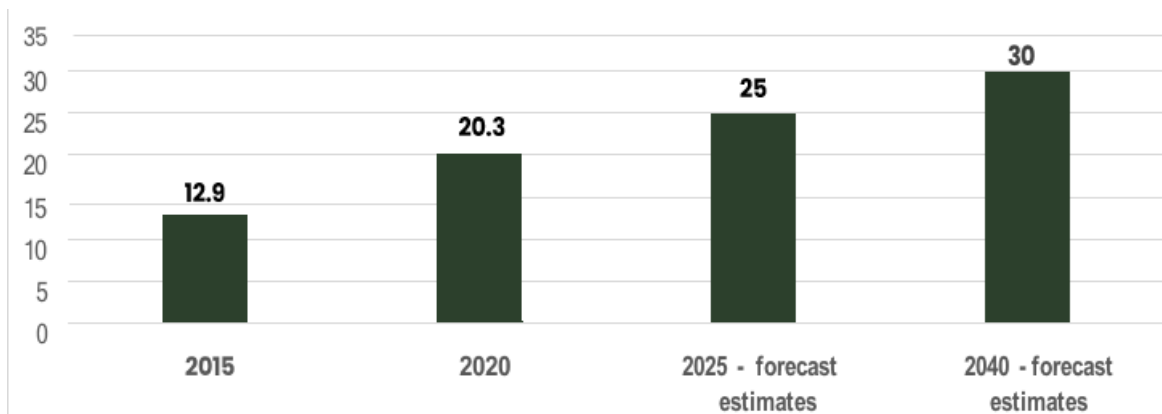
Source: Development Master Plan of Dushanbe City

The rapidly growing population will also put significant pressure on the economy in terms of the need to provide public goods and services, food supplies and jobs in the future.

Diagram 14. Forecast of the population of Dushanbe city, million people.
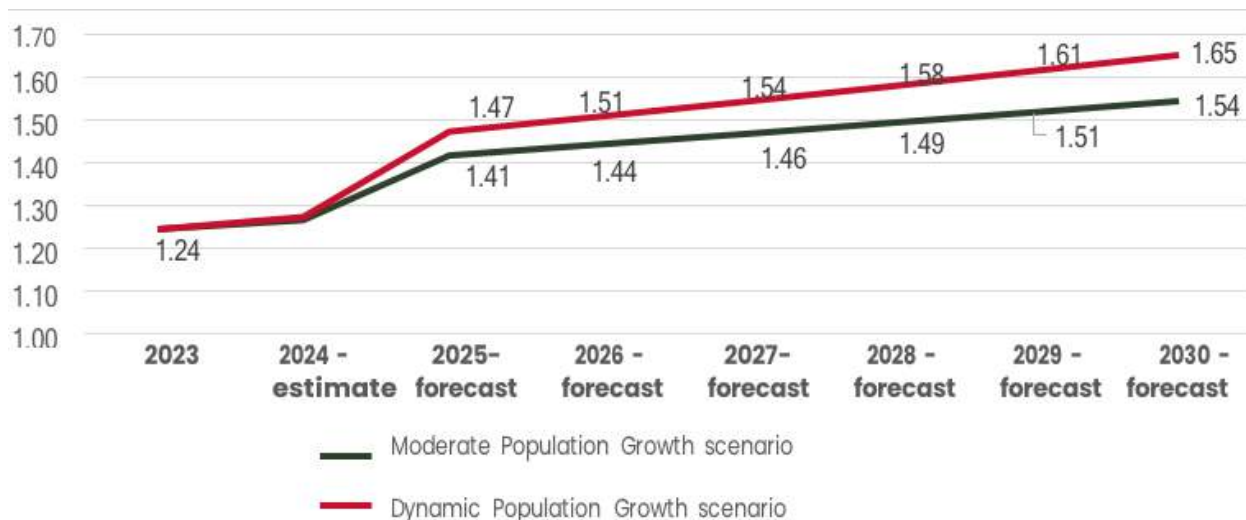
Source: Calculated based on the Demographic Yearbook of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Currently, the largest share of the population is made up of children, adolescents and young people – almost 63%. And their share will also be significant in the future, including due to the joining of rural areas, where the natural population growth is very high.

Population growth primarily puts pressure on the healthcare and education systems. Effective use of the demographic dividend will require increased investment in human capital development.

Diagram 15. Population structure of Dushanbe city, thousand people
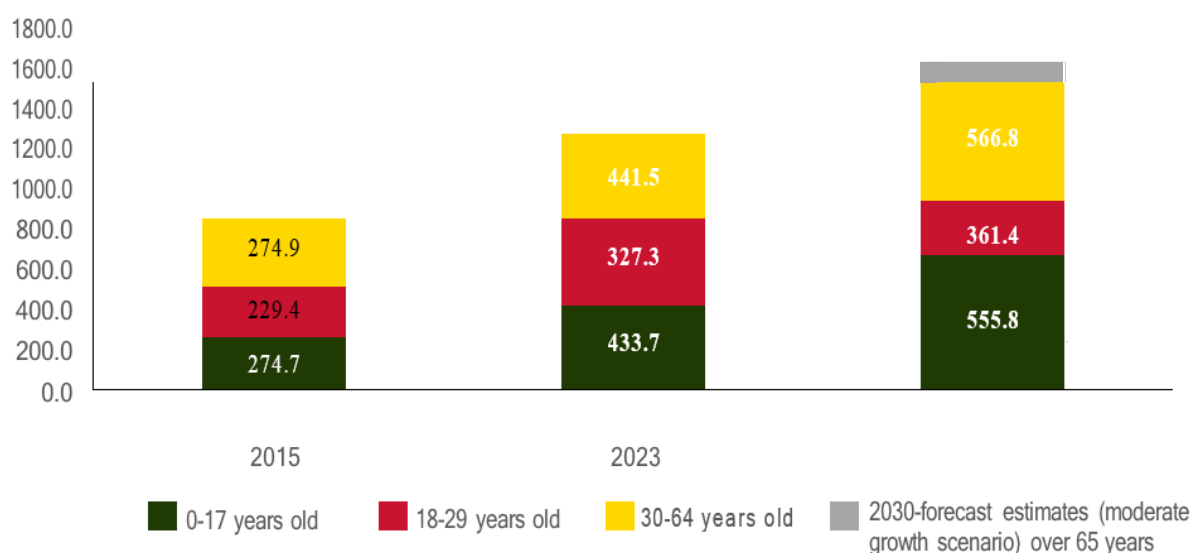
Source: Calculated based on the Statistical Yearbook of Dushanbe city, Main Directorate of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023.

Demographic forecasts indicate an increase in the number of people of economic activity age – from 15 to 64 in the city. According to forecast calculations, for the period up to 2030, the growth of the working-age population will be 127-130 thousand people, or approximately 15%. The average annual growth will be about 14.5 thousand people. Therefore, the objective is to increase the pace of economic and social development with the aim of increasing the level of employment, accompanied by an increase in the educational level of the employed population.

An increase in the population will increase the demand for public services and infrastructure, as well as for a higher level of environmental and social solutions. And accordingly, it is important that urban planning is increasingly based on the principles of a smart city. At the same time, the emphasis on increasing opportunities and potential, taking into account the joining of rural settlements to the city, will be accompanied by decisions on investment and infrastructure plan.

Box 3. Given the global trend of increasing number of urban residents, issues of organizing urban spaces to ensure maximum comfort for residents will be relevant in the long term.

Some foreign examples of implementing the smart city concept:

- installation of video cameras and special sensors (devices for monitoring water supply, electricity, energy devices, traffic conditions, noise levels, etc.) on the streets, in houses and enterprises, which collect information about the situation in the city and allow receiving up-to-date information in real time about the state of various spheres of city life;

- use of intelligent traffic management systems, which helps reduce traffic congestion;

- development of platforms/systems for online access to public services, applications created to help people with low vision and other perception features are supported, which increases the availability of services for everyone;

- provision of solar power for bus stops, billboards and street lighting, which contributes to energy efficiency;

- insulation of facades of houses and enterprises, which significantly reduces heating costs;

- implementation of an irrigation management system in city parks and gardens, which reduces water consumption.

One of the main directions in the development of Dushanbe city will be the integrated management of urban infrastructure, operations and citizen interaction.

In turn, the sustainability of the implementation of urban policies will be ensured, supported by policies on children, youth, education, family and health, favorable environment, and the development of measures to promote productive employment.

4.2. Ensuring food security (SDG 2)

Progress in the formation of a "green city" and an increased focus on food systems have the potential to contribute to solving the broader social problems of Dushanbe city. Along with enhancing food security, such measures can contribute to the sustainability of the workforce and become sources of new jobs within the production and supply chain.

The Executive Public Authorities of Dushanbe city actively participate in the implementation of a number of programmes aimed at improving the provision of the population with food products, in particular: the Programme for the Development of the Agro-Food System and Sustainable Agriculture for the Period up to 2030, the Food Security Programme of the Republic of Tajikistan for 2020-2024, the Food Safety Programme of the Republic of Tajikistan for 2019-2023, the Nutrition and Physical Activity Strategy in the Republic of Tajikistan for 2015-2024, the Multisectoral Plan to Improve Nutrition in the Republic of Tajikistan for 2021-2025, the Programme for the Prevention of Obesity and the Formation of Healthy Nutrition in the Republic of Tajikistan for 2019-2024.

In general, the growth of household income in Dushanbe city is accompanied by changes in the structure of consumption expenditure. Despite the decrease in the share of expenditure in recent years, they remain the main item of household expenditure on food purchases. The goal has been set to reduce this share of expenditure to 40% by 2030[ix], through income growth, food production in the country and ensuring its availability, as well as through the implementation of the objective of rational consumption and production. Accordingly, efforts will be enhanced to increase the production and availability of food.

Diagram 16. Share of Dushanbe household consumer expenditure on food, %
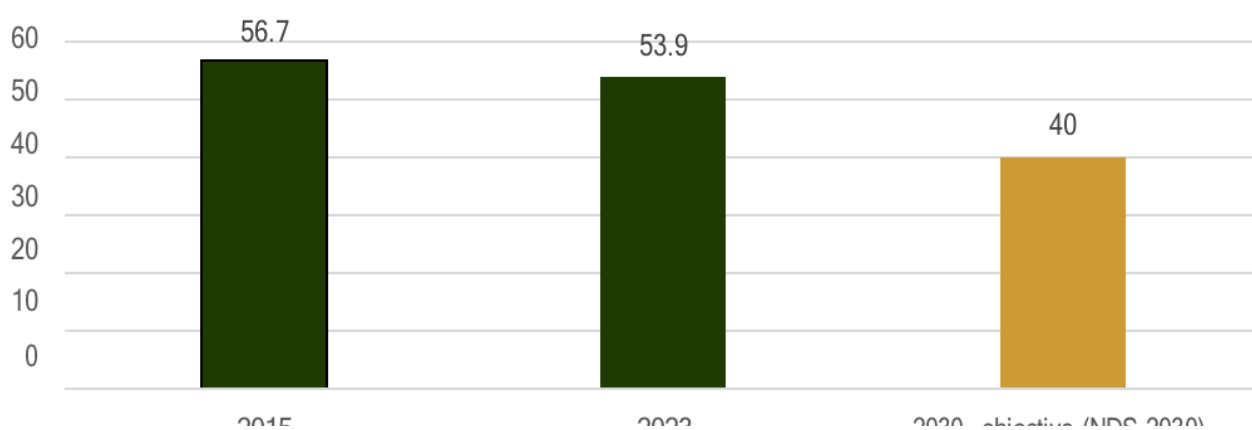
Source: Statistical Yearbook of Dushanbe city, Main Directorate of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2024

The well-being of families in Dushanbe is improving in the medium term (if in 2016, 74% of households in the framework of the World Bank's high-frequency survey "Listening to Tajikistan" noted that the family could buy enough food for members of their households in the last 10 days, then in 2022, at least 86% of households noted that). The situation with the ability to purchase food products to a sufficient extent will be accompanied by an increase in healthy nutrition[x].

Diagram 17. Percentage of household-respondents in Dushanbe city, who noted that the family was able to buy enough food for family members over the past 10 days (2022)
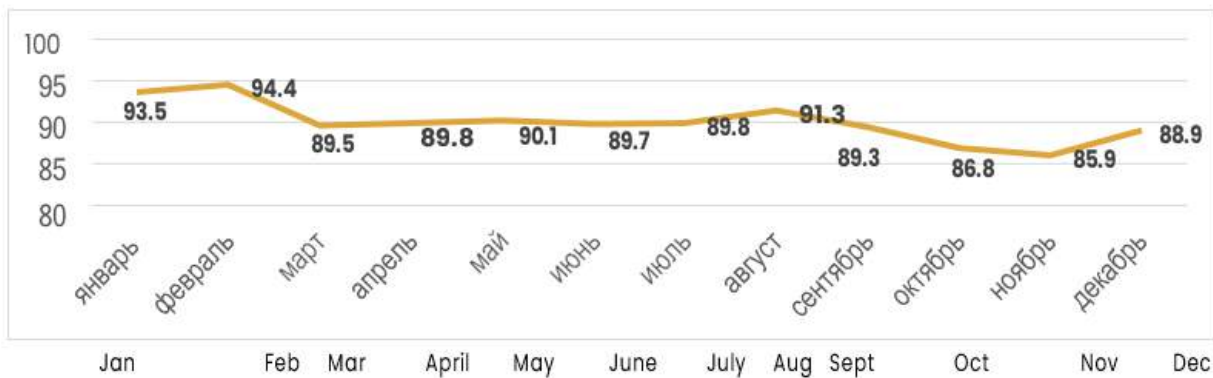
Source: Calculated based on the Listening to Tajikistan database, World Bank, 2023

In 2019, the extreme poverty rate was 9.4%, considering the importance of achieving zero extreme poverty. Taking into account the natural and migration growth of the population, it will be important to make consolidated efforts aimed at increasing the potential of health care and education, promoting employment and social protection of the population.

The growth of income of the population, in general, outpaces the growth of food prices. In the future, even greater efforts will be aimed at reducing inequality, reducing the share of low-income people, whose consumption structure is very uniform, with a predominance of bakery products.

**Diagram 18. Increase in population income and food prices in Dushanbe city, % (2015 = 100)**
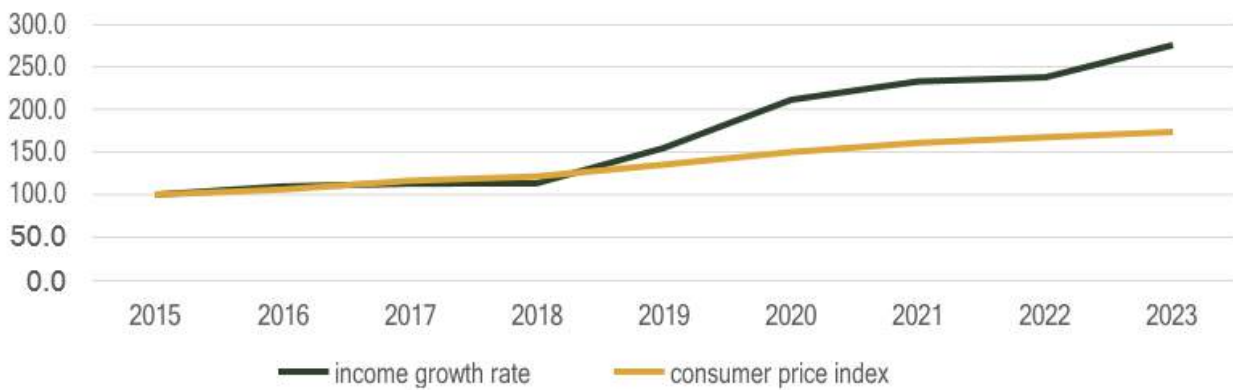
Source: Statistical Yearbook of Dushanbe city, Main Directorate of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023

The city has a State Unitary Enterprise "For the Production, Procurement, Reservation and Sale of Essential Products in Dushanbe City ", which annually reserves more than 40 thousand tons of food products in special refrigeration chambers[xi]. At the same time, fairs are held daily to sell essential agricultural and agro-industrial products at affordable prices in densely populated areas of Dushanbe city, regardless of the season.

To maintain stable food prices in the capital's markets, the practice of providing tax breaks and incentives for the State Unitary Enterprise *"For the Production, Procurement, Reservation and Sale of Essential Products in Dushanbe City "* – exemption from value added tax in the amount of 50% and complete exemption from customs duties was introduced in 2023.

Due to the growth of average incomes of the population and changes in lifestyle and working conditions, changes are noticeable not only in the volumes of food consumed. In addition to traditional grains, the share of dairy products, meat, vegetables and fruits, as well as highly processed foods in the diet is growing. The programmatic actions implemented in Dushanbe city are aimed at reducing vulnerability due to malnutrition, especially among women and children. A number of programme documents are directly aimed at solving the problem of improving children's nutrition, including the "National Communication Programme for the First 1000 Days of a Child's Life in the Republic of Tajikistan for 2020-2024", *"Strategy for Sustainable Development of School Nutrition in the Republic of Tajikistan for the Period up to 2027"*.

There is a decrease in the birth of children with low birth weight (less than 2500

g). In order to achieve the goal of reducing the prevalence of low birth weight by 30% by 2030, consolidated efforts will be expanded, both to improve access to adequate nutrition and health care.

According to the results of the Demographic and Health Survey, in general, it was possible to improve the indicators of the nutritional status of children in Dushanbe city[xii]:

- The percentage of children under five who are stunted has decreased from 18.9% in 2012 to 8.7% in 2023 (SDG 2.2.1). To reduce the number of children with stunting by 50% by 2030, this figure will need to fall to at least 7%. Greater progress in reducing stunting (especially as rural areas become urbanized) will require greater investment in nutrition-specific interventions and nutrition-sensitive interventions.

- The proportion of children suffering from wasting (thin for their height) has decreased from 10.3% in 2012 to 2.4% in 2023 (SDG 2.2.2). Efforts are aimed at further reducing this parameter (it is expected that the global target value of the indicator for 2030, which is less than 3%, will be achieved). The solution to the problem is associated not only with the need for a significant increase in investment in the prevention of wasting, its early detection and treatment, but also in ensuring greater physical and economic accessibility of a variety of food products in the city.

- The incidence of obesity among children has also decreased: if in 2012 5.4% of children were overweight, then in 2023 – only 3%. The target for 2030 assumes a significant

reduction in the prevalence of overweight in children under the age of five (SDG 2.2.3.) – to no more than 3%. To achieve the 2030 target, efforts will continue to be actively aimed at improving the quality of children's nutrition and other lifestyle factors, such as physical activity.

Efforts to improve maternal health will increase even more. In 2017, one third of women of childbearing age suffered from anaemia[xiii]. To achieve the global 2030 target of anaemia prevalence at no more than 14.3%, a comprehensive, multisectoral approach will be promoted to identify and eliminate all causes and risk factors for anaemia in women, including those related to poor nutrition, gynecological diseases, and low socio-economic status.

Adult obesity is not yet a serious threat compared to other countries. About 17% of the city's population is overweight. In addition to improving diet and improving the quality of nutrition, investments will be required in appropriate health measures to promote a healthy lifestyle.

The city is promoting mandatory food fortification systems and standards – iodized salt has been supplied to city retail outlets for home consumption and for use in food industry enterprises; the process of fortifying wheat flour has been launched at city enterprises.

Food security and adequate nutrition in the city depend on the structure and efficiency of the food supply chain. As the city expands and the road and communication infrastructures improve, the distinction between the formerly rural areas (territories that became part of the city) and urban areas will gradually be erased, and schemes for the supply of fresh food products to city retail outlets will develop. Currently, modern platforms are being formed to ensure the sustainable supply of food products throughout the year, regardless of the season. Supermarkets, fast food outlets, delivery services and other retail formats are developing in the city.

Box 4. Recommendations for smart technologies and solutions to improve nutrition and food security (based on multi-stakeholder discussions):

- Promoting healthier food environments through marketing regulations, food labelling and nutrition education;

- Reducing demand for high-calorie foods high in fat, sugar and/or salt through fiscal policies;

- Promoting the establishment of healthy food outlets, safe and nutritious street foods and community food markets;

- Supporting urban and peri-urban food producers and taking their interests into account in spatial planning.

Actions to strengthen food security in the city will continue to be based on a comprehensive approach, which will equally include measures aimed at:

- Creating a food belt around the city specializing in the production of ecological, organic products for delivery to the city. Close connectivity with growing city markets, warehouses and processing facilities will be ensured in rural and suburban areas;

- Stimulating the growth of returns on investment in urban infrastructure – roads, warehouses and cold storage rooms;

- Regulating the process of ensuring food safety within the framework of organizing the processes of cleaning, sorting, packaging, transportation, storage of agricultural and food products, as well as wholesale trade in these products;

- Combining the emergence of supermarkets using modern food technologies with the streamlining of the functioning of open and food markets/bazaars;

- Expanding the promotion of healthy eating, limiting the consumption of processed foods and highly processed products, which are becoming cheaper and more accessible and are increasingly advertised.

4.3. Improving health and well-being for all (SDG 3)

The development of the healthcare system has allowed the Executive Public Authorities of the city to achieve significant results in this sustainable development goal.

A set of efforts and activities to ensure health and increase life expectancy in the city are provided within the framework of consolidated actions in the implementation of national programmes for the development of healthcare, including the "Strategy on Healthcare of the Population of the Republic of Tajikistan for the Period up to 2030" (approved by the Decree of the Government of the Republic of Tajikistan No. 414, of September 30, 2021), *"The Programme for the Development of Public Health Institutions of the Republic of Tajikistan for 2021-2025"* (approved by the Decree of the Government of the Republic of Tajikistan No. 461, of October 26, 2021), *"The National Immunoprophylaxis Programme in the Republic of Tajikistan for 2021-2025"* (approved by the Decree of the Government of the Republic of Tajikistan No. 51, of November 27, 2021), "The Programme for the Training of Medical Personnel for the Period up to 2030" (approved by the Decree of the Government of the Republic of Tajikistan No. 702, of December 31, 2020,).

With significant healthcare resources, Dushanbe city has relatively high health indicators for its population.

Dushanbe has the highest provision of doctors in the country. In terms of the number of doctors and hospital beds per 10 000 people, the city's level exceeds the national average: by 3.4 times for doctors, by 1.5 times for hospital beds[xiv]. This reflects the efforts that the city makes to provide the population with health services, creating opportunities for specialized health care for the population of other cities and regions of the country. The ratio of mid-level medical personnel to doctors in the city has increased from 1.0 in 2015 to 1.4 in 2023. And efforts are aimed at bringing this ratio to at least 2.0 by 2030.

The growth rate of the number of doctors is still lagging behind the population growth rate, accordingly, the key tasks for the future are related to solving the problems of staffing, accompanied by enhancing the status of healthcare workers, the introduction of a system of decent wages in the sector, which is associated, among other things, with the lessons learned from the outbreak and spread of COVID-19

Diagram 19. Number of health workers in Dushanbe city (per 10 000 population) (SDG 3.c.1)
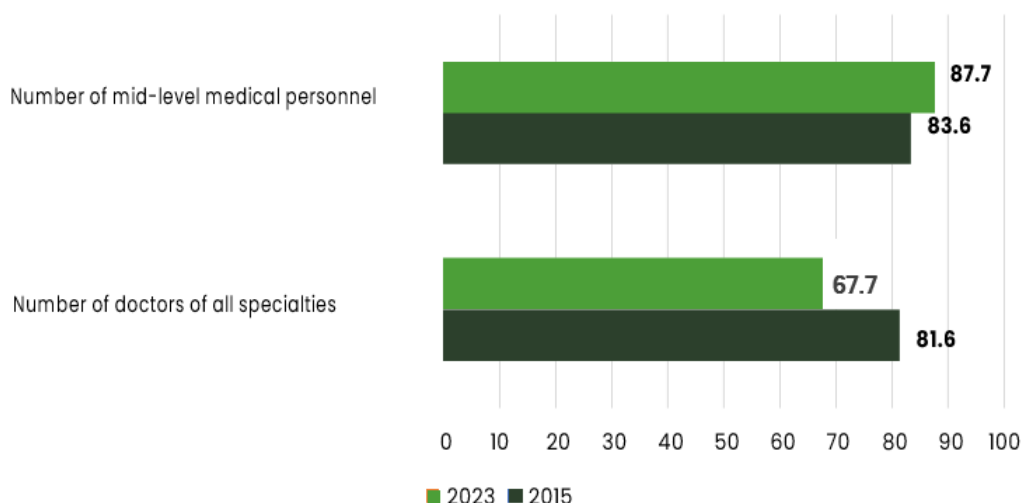
Source: Statistical Yearbook of Dushanbe city, Main Directorate of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023

To improve the quality of medical services and the efficiency of doctors, efforts in the city are aimed at enhancing the provision of medical institutions with modern diagnostic equipment (CT scanners, MRI scanners, positron emission tomographs, gamma cameras, etc.). Expectations in this area are associated with improving the quality of diagnostics and treatment.

Dushanbe has a relatively low overall mortality rate, which is due to the peculiarities of the age structure of the population, a favorable ratio of young and old ages. The overall mortality rate in the city is steadily declining. There was a slight increase only in the year of COVID-19 outbreak, but it was possible to mobilize resources and continue the trend of decreasing mortality.

Diagram 20. Mortality rate in Dushanbe city (number of deaths per 1 000 population)
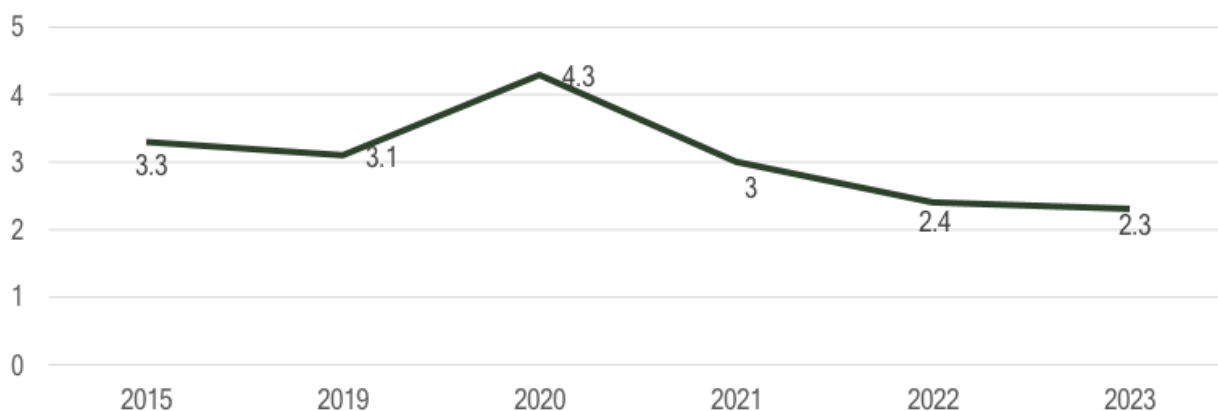

Source: Statistical Yearbook of Dushanbe city, Main Directorate of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2024

The reduction in mortality is mainly due to a significant improvement in childhood indicators among the urban population of the country, especially in Dushanbe city. If in 2015 the share of deaths in childhood and adolescence age in the total number of deaths among the urban population of the republic was 18.8%, then by 2022 it had decreased to 15.1%, that is, fewer and fewer losses are recorded in childhood age. At the same time, in 2020 – the year of COVID, the share of deaths in old age was the highest.

Diagram 21. Distribution of mortality by age groups in Dushanbe city, %
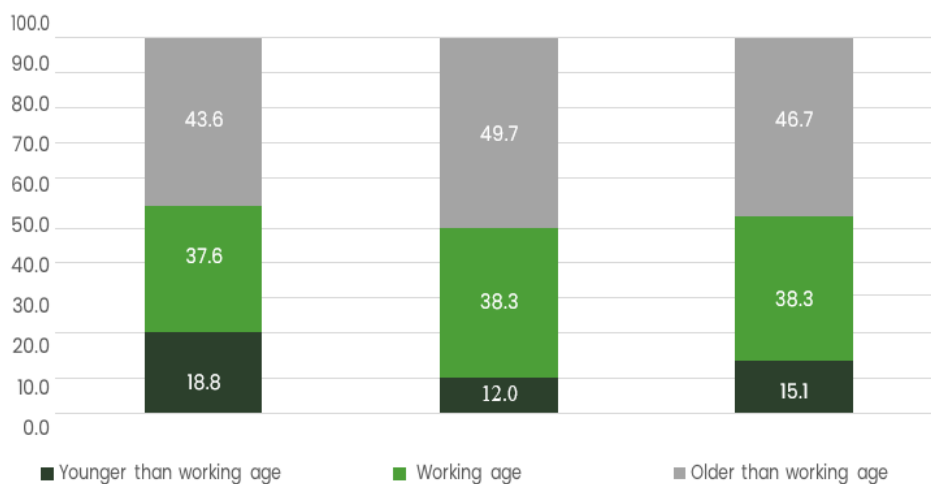
■ Younger than working age ■ Working age ■ Older than working age

Source: Calculated based on the Demographic Yearbook of the Republic of Tajikistan – 2023, statistical digest, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Reducing the maternal mortality rate (MMR) is defined as a priority in the country's key strategic documents. For example, in the NDS-2030, the target maternal mortality rate is 20 deaths per 100 000 live births by 2030. In 2008, the Government of the Republic of Tajikistan adopted an action plan to ensure safe motherhood for the period up to 2024 (Decree of the Government of the Republic of Tajikistan No. 370, of August 1, 2008), aimed at reducing maternal and child mortality by ensuring access to safe services, including emergency obstetric care.

Data from the 2017 Demographic and Health Survey show that the MMR (SDG indicator 3.1.1) in Dushanbe city was 24.1 per 100 000 live births. The vast majority of maternal deaths are manageable, given the availability of qualified personnel and the readiness of institutions for emergency obstetric care. The focus of actions to reduce maternal mortality is associated with the prevention of obstetric errors, improved diagnostics, and intensive care, which largely depend on related specialists.

The number of births attended by skilled health workers (SDG indicator 3.1.2) reached 97% compared to 87.6 in 2012.

Increasing immunization, given new epidemiological challenges, is an important area of activities. The level of immunization coverage in the city is growing, which allows for some control over the incidence of vaccine-preventable infections. According to estimates, 79% of children aged 12-23 months received all age-appropriate vaccinations in 2017.

Almost 100% of births of children under the age of 5 are registered, which exceeds 98% of registered births in 2017 (SDG 16.9.1) (UMF-75), i.e. almost all children can receive public health care.

Mortality rates among children in Dushanbe city are significantly lower than the national average according to the 2017 Demographic and Health Survey.

Diagram 22. Mortality rate among children in 2017 (number of deaths per 1 000 live births), (SDG 3.2.1)
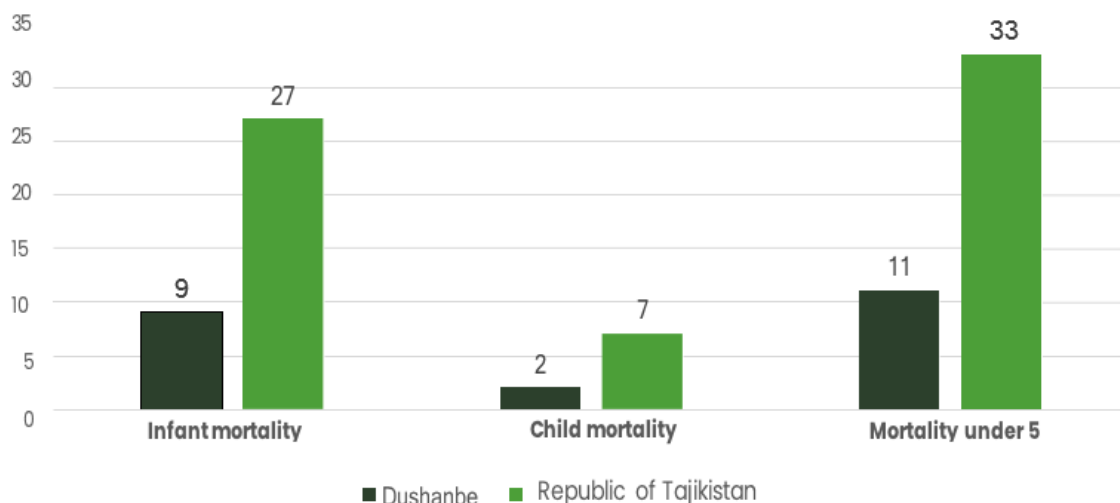

Source: Tajikistan. Health and Demographic Survey 2017 // Key Indicators Report, Agency on Statistics under the President of the Republic of Tajikistan, Ministry of Health and Social Protection of the Population of the Republic of Tajikistan, 2018

Over the past ten years, it has been possible to significantly reduce the birth rate among young mothers in the 15-19 age group, which provides indirect data on access to relevant medical services and reflects the processes of improving the sexual and reproductive health of adolescents. At the same time, the dynamics of the decline in this indicator in Dushanbe city is higher than in other cities of the country – over the period between the last two population censuses, the indicator decreased by almost 2.7 time

Diagram 23. Birth rate among adolescent girls (15-19 years old) per 1 000 adolescent girls in the same age group (SDG 3.7.2) (UMF-07)
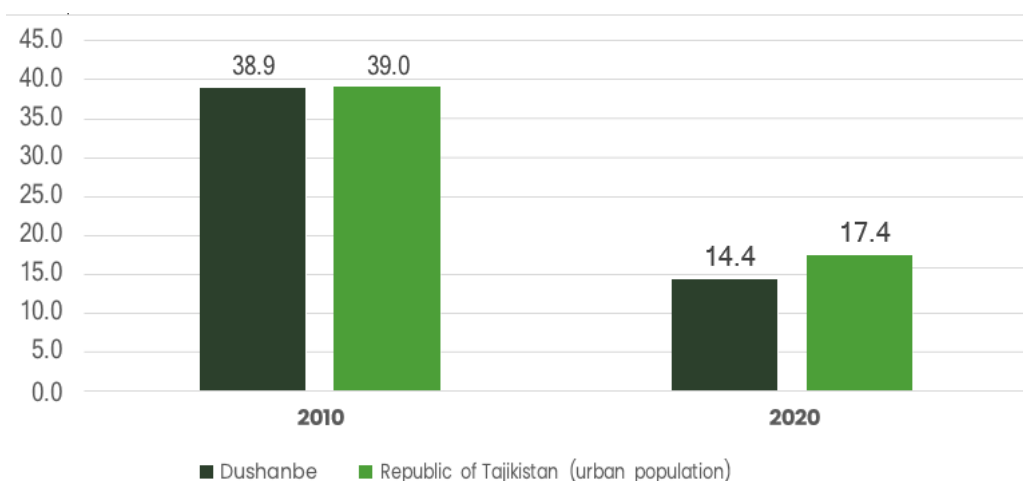
Source: Population and Housing Census of the Republic of Tajikistan. Vol. 10. Fertility and Mortality of the Population of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Non-communicable diseases (NCDs) remain the leading cause of death in Dushanbe city, accounting for about 99% of deaths in the city, which sets the focus for efforts in the medium term.

A characteristic feature of Dushanbe city, as well as the country, is that the greatest impact on the change in overall mortality is exerted by mortality from diseases of the circulatory system, which annually cause more than half of deaths (54 percent of the total number of deaths in 2023)[xviii]. The mortality rate from diseases of the circulatory system in Dushanbe city is lower than in other cities.

The COVID-19 pandemic has caused an increase in mortality from diseases of the circulatory system (by 32.4% in Dushanbe city compared to the pre-pandemic year).

The mortality rate from diseases of the circulatory system has been steadily declining in subsequent years.

Diagram 24. Mortality rate from diseases of the circulatory system in Dushanbe city (total deaths per 100 000 population) (SDG 3.4.1)
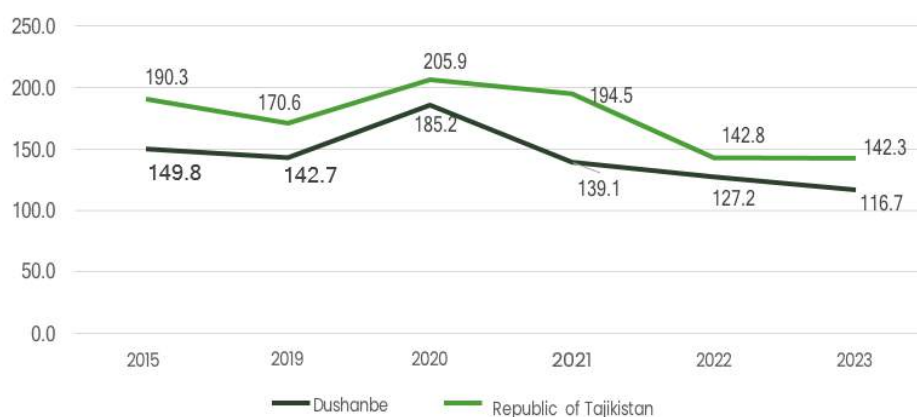
Source: Demographic Yearbook of the Republic of Tajikistan, statistical digest, Agency on Statistics under the President of the Republic of Tajikistan, 2020-2023

Respiratory diseases have occupied a significant position in the structure of causes of death in recent years. Their share in the total number of deaths has increased from 3% to almost 9%, which is largely due to the situation with COVID-19. Until 2020, the mortality rate from respiratory diseases in Dushanbe city was below the national average. However, the mortality rate for this reason in the city increased sharply in the pandemic year – largely due to the fact that at the very beginning of 2020 (before the widespread introduction of restrictions on movement), the number of visits to healthcare institutions in the city increased significantly, including due to the appeals of residents of nearby settlements who were in a more serious condition. In addition, the city has a higher population density and wider external transport links. The Executive Public Authorities of the city responded promptly to the challenge associated with the coronavirus infection, strengthening its activities in the area of improving the efficiency of urban management, which creates the necessary conditions or background for the provision of high-quality medical services. City healthcare institutions have significantly increased their capacity to treat coronavirus infection and reduce complications. Currently, the mortality rate from respiratory diseases in the city is not only significantly lower compared to 2020, but also continues to steadily decline.

Diagram 25. Mortality rate from diseases of the respiratory system in Dushanbe city (total deaths per 100 000 population) (SDG 3.4.1)
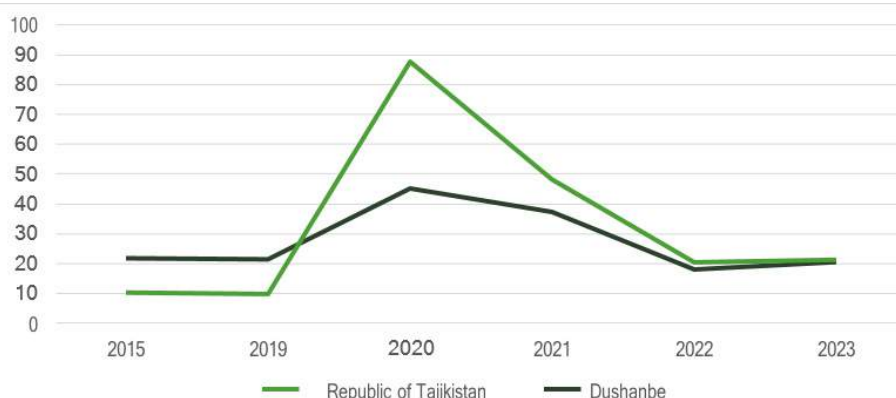

Source: Demographic Yearbook of the Republic of Tajikistan, statistical digest, Agency on Statistics under the President of the Republic of Tajikistan, 2020-2023

Both before 2020 and subsequently, the mortality rate from neoplasms in Dushanbe city has been below the national average. Mortality from neoplasms is decreasing. A significant reduction in this indicator will be ensured by an increase in early detection of the disease and improved treatment outcomes through the use of advanced treatment methods.

Diagram 26. Mortality from malignant neoplasms in Dushanbe city (total deaths per 100 thousand population) (SDG 3.4.1)
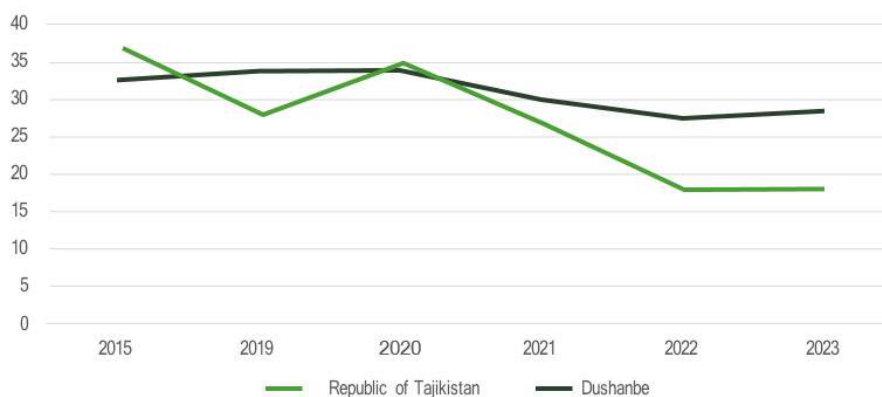

Source: Demographic Yearbook of the Republic of Tajikistan, statistical digest, Agency on Statistics under the President of the Republic of Tajikistan, 2020-2023

The issues of prevention, diagnosis, high-quality and timely treatment and rehabilitation of patients with these diseases are becoming increasingly important. It is necessary to significantly reduce the impact of such risk factors as access to water, clean air and balanced nutrition on health.

At the same time, efforts in Dushanbe city are aimed at reducing premature mortality among the population from diseases of the circulatory system, respiratory system and malignant neoplasms by 30% by 2030.

The city is participating in the implementation of the National Programme for the Protection of the Population from Tuberculosis for 2021-2025.

In 2023, the incidence rate of active tuberculosis in the population decreased almost by half compared to 2015. The set of actions is aimed at achieving zero incidence of tuberculosis.

Diagram 27. Dynamics of the incidence rate, prevalence of tuberculosis in Dushanbe city (per 100 thousand population) (SDG 3.3.2)
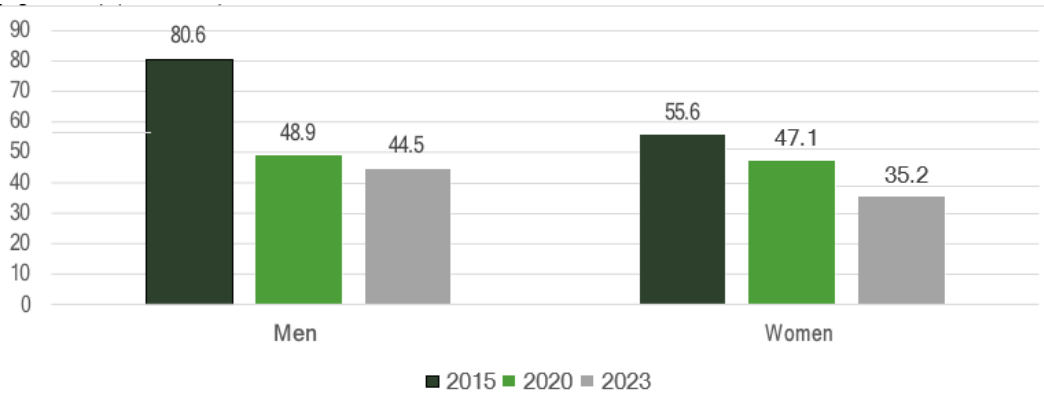
Source: Healthcare in Tajikistan/ statistical digest, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Actions to enhance capacity for disease prevention, treatment and infection control in TB facilities are implemented in compliance with international standards, including the WHO guidelines for the screening and treatment of patients with drug resistant tuberculosis.

Meanwhile, in aggregate, the initiatives of Dushanbe city are related to increasing healthy life expectancy.

Life expectancy has a steady growth, which exceeds the national figures. It increased by 3.7 years on average in Dushanbe city over 2015-2019.

Diagram 28. Life expectancy of the population of Dushanbe city, years (UMF-17)
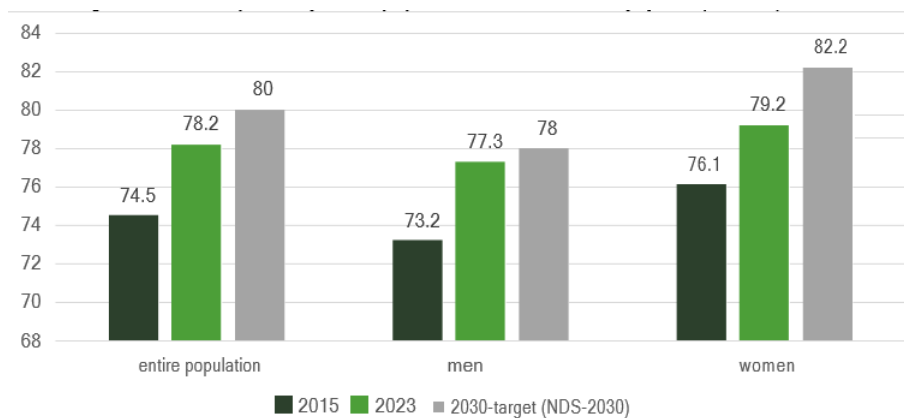
Source: Demographic Yearbook of the Republic of Tajikistan, statistical book, Agency on Statistics under the President of the Republic of Tajikistan, 2023

As in the rest of the world, in the city, men live shorter (77.3 years on average) than women (79.2 years).

Looking forward, as life expectancy (80 years by 2030) and birth rates increase, the number of the most intensive consumers of health services will increase. They are elderly population (over 65 years old), which by 2030 compared to 2023 may increase by almost 50%, and the number of child population will increase by almost 30%. The number of women of reproductive age (15 to 49 years old), who are at high risk, will increase by 25% in 2030.

The medical and demographic prospects will require adequate responses from the health system.

Considering the high population growth rate, by 2030 the capacity of healthcare facilities in the city should increase by almost one third.

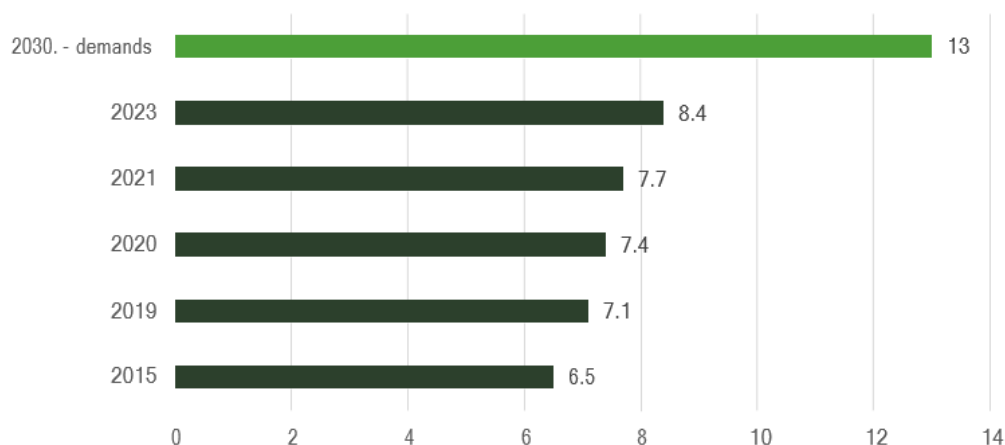The total need for doctors will amount to almost 13 thousand people.

If current levels of healthcare services are to be maintained, the number of health centers and hospitals will need to increase by about 30% by 2030 compared to 2015.

Diagram 29. The number of doctors of all specialties in Dushanbe city, thousand people.

Source: Spectrum calculations, results of the RAPID model

Box 5. The areas recommended for application of smart technologies and solutions in the healthcare system of Dushanbe city (as a result of multi-stakeholder discussions, with the participation of civil society):

- comprehensive preventive measures, advisory services on a cross-sectoral basis;

- public and special sport grounds and mechanisms to promote healthy lifestyles (including a balanced diet, sufficient physical and mental activity and social interaction);

- ensuring the safety of food, drinking water, medicines and increasing their accessibility.

The digital technology will take over more and more dynamically, which will be associated with the creation of a single electronic database of patients; introduction of network medical records; evidence-based medicine (using devices based on technical innovations in the field of telecommunications). As of August 1, 2023, all healthcare institutions of the city will switch to a non-cash format of accepting payment for all paid healthcare services.

It is expected that the average annual growth rate of investments, including at the expense of public-private partnership, will steadily increase, given the expansion of the city territory and its status of a leading center of special healthcare services. Thus, the implementation of a set of actions will be ensured to stimulate the inflow and retention of highly qualified personnel in the healthcare system.

4.4. Ensuring accessibility and quality of education (SDG 4)

Building sustainable competences and innovations has become a crucial prerequisite for real and lasting progress. However, it is not only about increasing access to education and innovation, but also about the quality of education and the performance of science. Being a large educational and scientific center of the country, the City of Dushanbe has increased obligations in this direction.

The highest number of students by level of education in Dushanbe city is concentrated in the secondary general and higher vocational education systems.

Diagram 30. The number of students in educational institutions in Dushanbe city, thousand people.
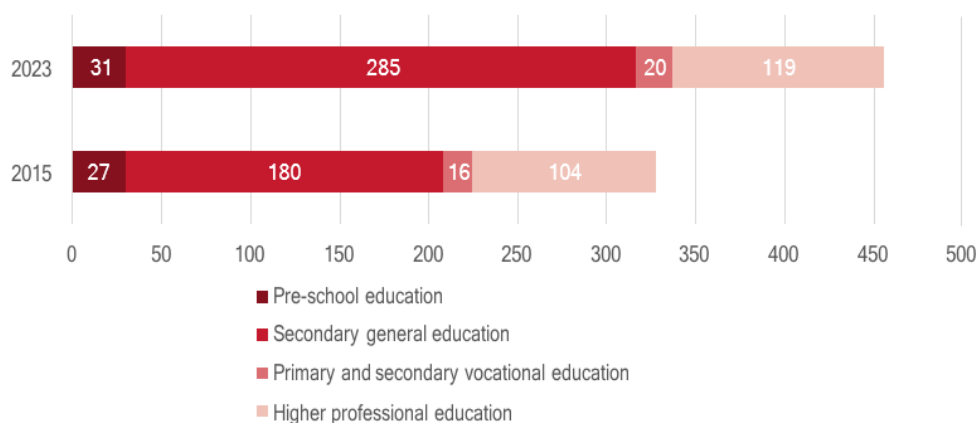
Source: Education in Tajikistan / Statistical book, Agency on Statistics under the President of the Republic of Tajikistan, 2024

The demographic processes have a strong impact on the age composition of the city's population and affect all groups of children, adolescents and young people - the main consumers of education system services at all levels. Respectively, the dynamics of the ongoing processes in the education sector is characterized by the growth of the capacity of the educational system, especially in the field of primary and secondary general education.

The growth in preschool enrolment of children aged 3-6 years is unsustainable, which is mostly due to the expansion of the city and the addition of rural settlements where the demand and availability of pre-school services are relatively low.

Diagram 31. Coverage of children aged 3 to 6 with pre-school care and education, % (SDG 4.2.1.2)
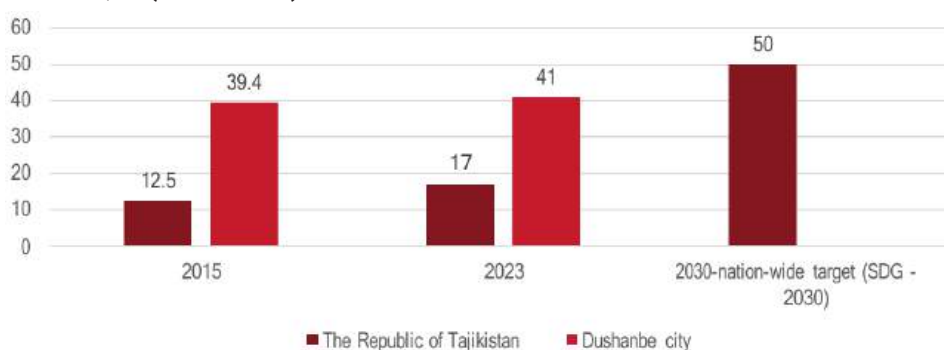
Source: Calculations based on the Statistical Book of the Education Sector of the Republic of Tajikistan, 2024

The level of coverage of children with pre-school education in the city is significantly higher than the national average level.

Overall, there has been an increase in the network of pre-school institutions (from 122 pre-school organizations in 2015 to 163 in 2023, including non-governmental organizations - from 20 to 95). However, taking into account the growth of the city, the increase in the number of pre-school institutions will be more dynamic in order to expand the coverage of pre-school education and improve its quality.

Dushanbe city is represented in the National Early Childhood Development Council established in the country, as part of the consolidation of actions to implement the state policy on early childhood development, search for modern ways and methods of policy implementation and development of proposals for building human capital, strengthening activities in the field of health and social protection and education.

The construction and reconstruction of educational institutions is under the continuous monitoring of Executive Public Authorities of Dushanbe city, and over the past seven years, there have been built and commissioned 42 general education establishments for 72,000 students in two shifts and 22 pre-school establishments with more than 4,300 students.

Number of children who have completed pre-primary education is growing annually. Though, in 2020, about 46.3% of children at the age of 6 (a little more than 8.9 thousand children) were involved in pre-school education, which is higher than the level of 2010, but the expectations for 2030 are much higher. In the meantime, taking into account the fact that the country is consistently transitioning to 12-year education, the city will increase the capacity of the education system, which will provide a better opportunity for effective preparation and readiness of children to school.

Diagram 32. Participation rate in organized learning (one year before the official primary age) in Dushanbe city (SDG 4.2.2)

Source: Population and Housing Census of the Republic of Tajikistan, 2020. Volume.4. Educational level of the population of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023
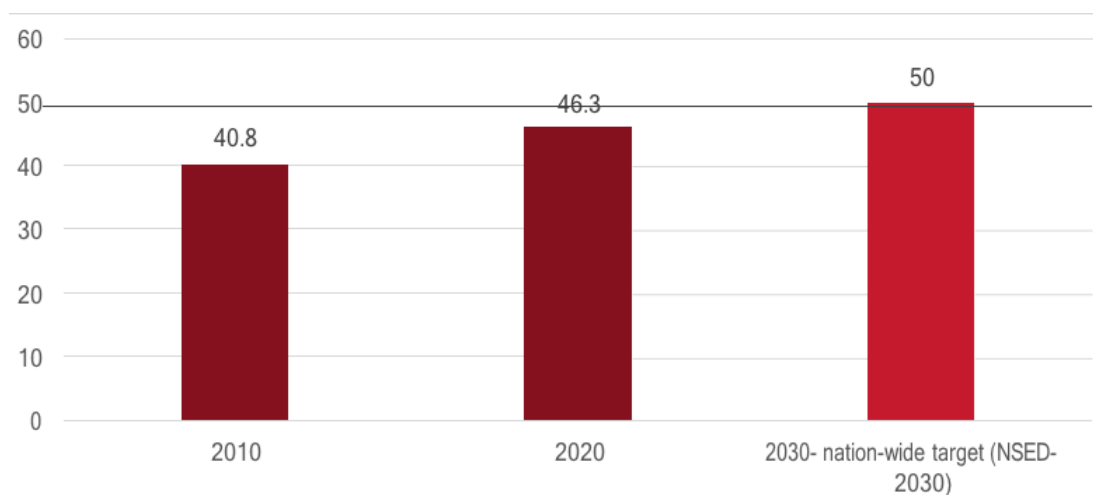
The city experiences growth in the number of Child Development Centers, from 2 centers in 2015 to 32 in 2023, aimed at promoting holistic child development: cognitive, physical, and socio-emotional development, as well as the ability to learn.

Participation in primary and secondary education (including girls) increased from 91 percent in 2015 to nearly 100 percent in 2023. Almost all children of appropriate age are covered by primary education.

Annually, the number of students grows by an average of 1.2-1.5 thousand children due to natural growth and internal migration. The number of first graders exceeds the number of school graduates by 2-2.5 times over this period. However, the existing infrastructure is developing depending on the growing needs in the general secondary education system.

Meanwhile, the growth of overcrowding in classrooms is accompanied by an increase in the number of students per 1 teacher, particularly in primary grades. Respectively, more and more efforts will be directed at solving the problem of substantially improving the infrastructure and human resources of the general and secondary education system, including by encouraging the establishment of private general education institutions.

Diagram 33. Number of students per 1 teacher in general secondary education in Dushanbe city
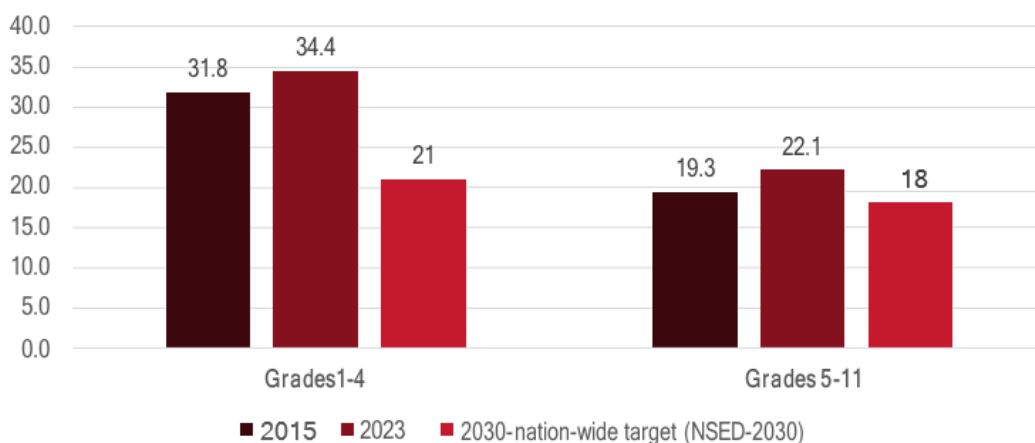
Source: Education in the Republic of Tajikistan / Statistical book, Agency on Statistics under the President of the Republic of Tajikistan, 2024

In the meantime, equipment in classrooms will be increasingly linked to the promotion of necessary skills and competences.

The professional level of the teaching staff is quite high. Thus, at the beginning of the 2023/2024 school year, from the total number of teachers in the system of secondary general education of the city, 94.3% had higher and incomplete higher education. The share of certified teachers increased by more than 1% in comparison with the 2015/2016 school year in basic and secondary schools. In the mid-term, the systems of recruitment and career development of teachers in general education institutions of the city, including in the previously rural areas annexed to the city, will be consistently improved.

Diagram 34. Proportion of qualified teachers in general education institutions in Dushanbe city in 2023, % (SDG 4.c.1)
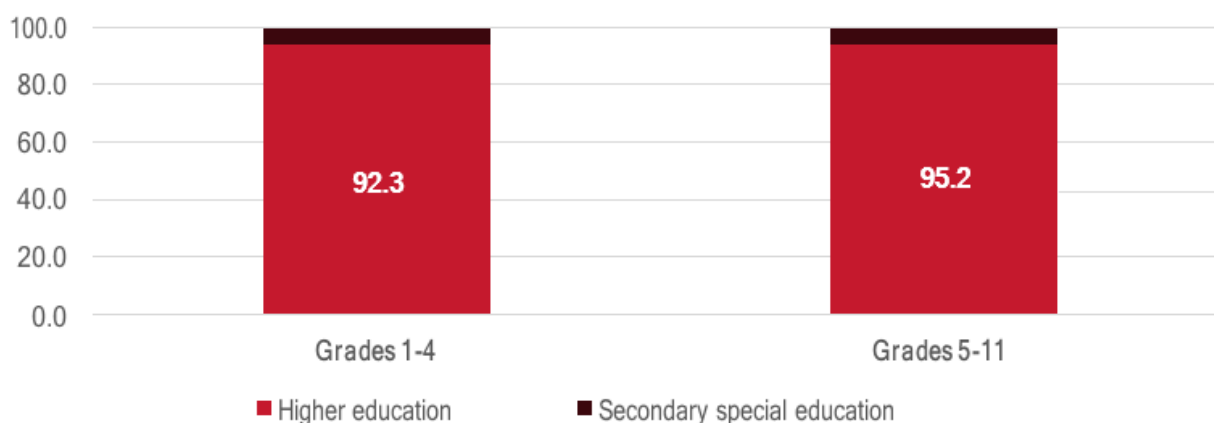
Sources: Calculations based on the Statistical Book of the Education Sector of the Republic of Tajikistan. Part 1, Ministry of Education and Science of the Republic of Tajikistan, 2024

In the framework of the implementation of sectoral programmes aimed at introducing modern information and communication technologies, educational institutions of Dushanbe city are fully equipped with computers, and the process of providing them with electronic whiteboards and projectors continues.

In addition, in 130 general education institutions of the capital (which is 65% of all general education institutions of the city) the web-based application *"e-Donish"* using information and communication technologies has been launched. In the framework of implementation of third phase of the application, a unified local information network was created in 25 general education institutions, each classroom is connected to modern computers, the Internet and Face ID surveillance cameras. In addition, 11.2 thousand teachers (95.5% of the total number of teachers), 246.3 thousand students (86.3% of the total number of students) and 202.5 thousand parents have registered in this web-based application and use the potential of *"e-Donish"*.

Along with that, parents pay for textbooks by non-cash method in all general education institutions of Dushanbe city.

Internet connection is partially provided in general education institutions of the city. The Internet is accessible to about 80% of general education institutions (SDG 4.a.1.b).

The *"Programme of Introduction of Information and Communication Technologies in General Education Institutions of the Republic of Tajikistan for 2024-2028"* is implemented in the city, as well as in the country as a whole. It is assumed that up to 2030, schools will be equipped with computers and connected to high-speed Internet access.

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Diagram 35. Personal computers used for educational purposes in daytime general education institutions of Dushanbe city (per 1 000 students), pieces (SDG 4.a.1.c)
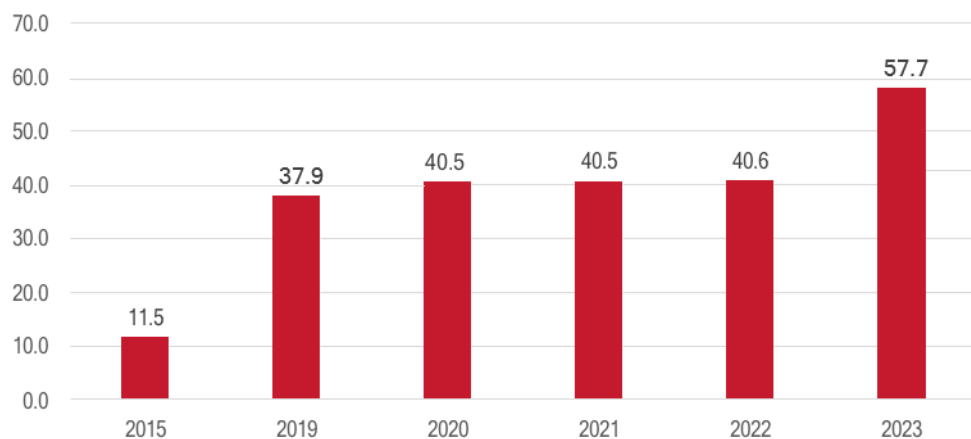
Source: Calculations based on the Statistical Book of the Education Sector of the Republic of Tajikistan. Part 1, Ministry of Education and Science of the Republic of Tajikistan, 2024

Dushanbe city is the center for training specialists with a higher education. For the last 5 years, annually on average more than 56% of all students of the country study in the universities of the capital city.

Between 2015 and 2023, the number of higher education institutions in the city increased from 24 to 26, and the number of higher education students increased from 103,500 to 119,200 students [xix]. In terms of the number of students and their share in the population, Dushanbe city is many times ahead of Khujand, Bokhtar and Khorog cities (administrative centers of the regions of the country).

The higher education institutions of the city are mostly state-owned, but some of the students of this level of education, while paying for their education, study on a contractual basis - that is about 70% of students.

At the same time, the efforts are now focused on the development of technical education, growth in the number of graduates of technical specialties, including increasing willingness to rapid technological changes, innovative paths of development of the city's economy and the country. To achieve this, the relevant base is being strengthened. The city actively participates in implementation of the Decree of the President of the Republic of Tajikistan on declaring the years 2020 - 2040 as *"Twenty years of studying and developing natural, exact and mathematical sciences in the field of science and education"*.

Dushanbe has been developing the practice of organizing an annual Science, Technology, Innovation and Invention Week for adolescents and youth of the city, during which various competitions are organized with the aim of supporting the interest of adolescents and youth in modern techniques and technologies. Several programmes are in place to work with talented young people, and comprehensive work is under way, including contests, olympiads, and competitions. The number of participants in national and international olympiads has increased, including in natural and exact sciences. In recent years, an average

of over 36% of participants have won first place awards (6.4% of all participants were first place winners, 11.2% of participants were second place winners, and 18.9% were third place winners)[xx].

With a view to the importance of innovative growth paths for the economy, the city is building its capacity to train professionals in technical fields.

Diagram 36. Increase in the number of graduates of technical specialties in higher education institutions of Dushanbe city, thousand people
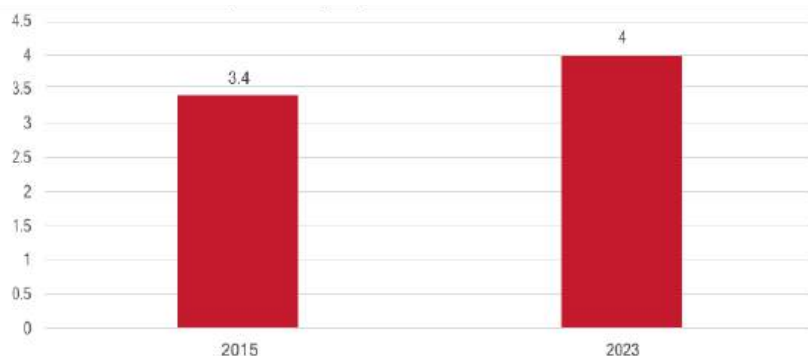
Source: Calculations based on the Statistical Book of the Education Sector of the Republic of Tajikistan. Part 1, Ministry of Education and Science of the Republic of Tajikistan, 2024

Although the higher professional education is a nationwide competence, however, the city is directly interested in its international status of university and scientific community. The establishment of world-ranked universities in the city can significantly increase the city's position in the field of training modern, market competitive personnel, which indicates, among other things, the quality of the environment (safety, environment, density of information and scientific networks, etc.).

The proportion of youth and adults aged 15-24 in formal or non-formal education or training, in Dushanbe city, is increasing. The gender gap in the enrollment of youth in the educational process is consistently narrowing. Moreover, the results for Dushanbe exceed the expectations set out in the National Strategy for the Education Development in the Republic of Tajikistan for the period up to 2030[xxi]. At present, the effort is to ensure that the proportion of students in formal and informal learning is at least 70%.

Diagram 37. Proportion of youth aged 15-24 who participated in formal and non-formal education and training, % (4.3.1)
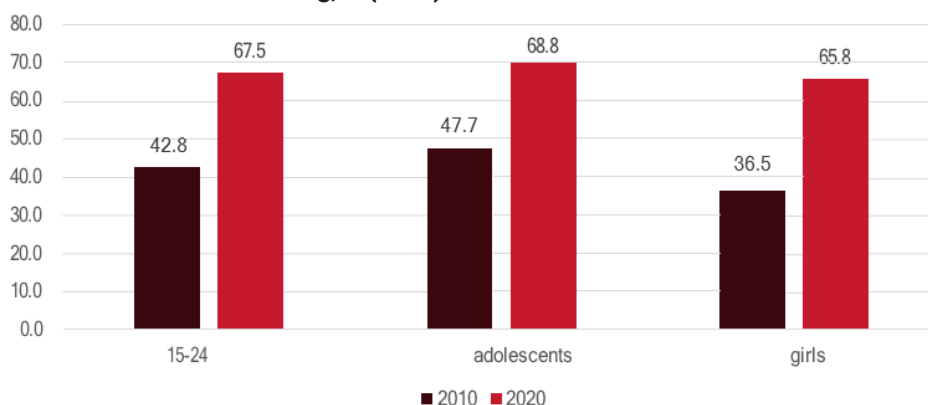
Source: Population and Housing Census of the Republic of Tajikistan, 2020. Volume. 4. Educational level of the population of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Gender inequality still exists in education, particularly in higher education, where girls represent 37.2% of the total student population (compared to 47.2% in primary/secondary education)[xxii]. However, in the dynamics, inequality in access to education is generally decreasing. In the mid-term period, a set of actions will be aimed at increasing the coverage of vocational education, including higher education.

Diagram 38. Gender parity index in the education system of Dushanbe city (SDG 4.5)

■ 2015 ■ 2023 ■ 2030-target

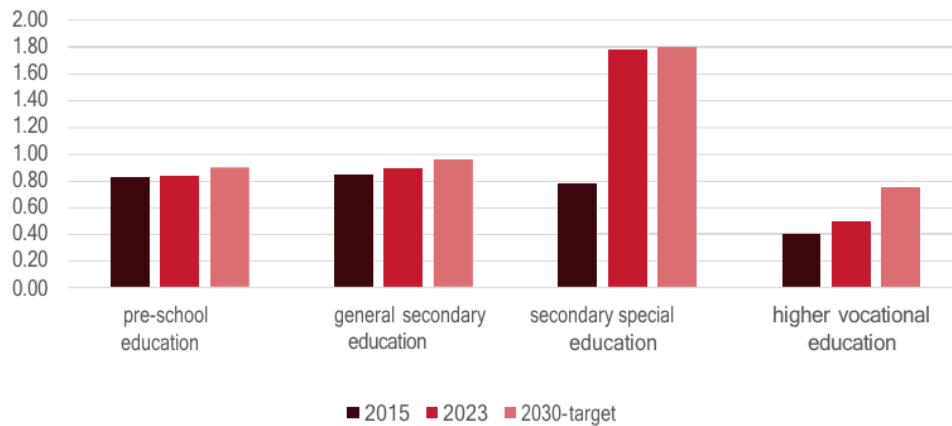*Source: Education in Tajikistan / Statistical book, Agency on Statistics under the President of the Republic of Tajikistan, 2024*

In the long term, demographic processes in Tajikistan will have a significant impact on the education system, posing new challenges and problems. The key demographic trend for education will be the increase by almost one third of the population of the age of general secondary and vocational education, which will put pressure on the education sector and will require additional investment to achieve programme development goals.

In 2030, compared to 2023, the additional school needs will amount to approximately 34 schools (also taking into account the unloading of the large current load of functioning schools). In order to avoid an increase in the number of students per secondary school teacher from the target level, the number of teachers must be increased by at least 35%.

Box 5. The areas recommended for application of smart technologies and solutions in the healthcare system of Dushanbe city (as a result of multi-stakeholder discussions, with the participation of civil society):

- Preparation for blended learning, with enhanced access to digital platforms hosting educational resources;

- Strengthening the system of national standardized diagnostic assessment tools to provide regular data on learning outcomes;

- Improving the quality of knowledge and practical skills, in general; competitiveness of students, including in natural and exact sciences.

Potentially, the city's education system will meet the challenges of training of highly professional specialists, strengthening digital skills, multilingual skills, ensuring continuity of education. At the same time, integrated action will bring together a diverse range of directions and efforts, among which are:

- Adaptation of the city's education system to changes in the labor market under the influence of digitalization. To successfully develop the digital economy, the system of education and retraining will provide the economy with specialists demanded by the digital era.

- Retraining of the majority of teachers and lecturers in order to master digital educational technologies. Decisive measures will be taken for the professional development of teachers in digital transformation;

- Changing the work of the teacher training institutes and centers, which will be based on modern IT applications;

- Increasing the level of digital and entrepreneurial literacy of all schoolchildren and students. Throughout the training, all schoolchildren and students will be prepared to work in the digital transformation of society and the market economy, i.e. they should learn how to conduct digital entrepreneurship in their field of study;

- Universal informatization of education. IT education will be literally in every subject;

- Universities will become drivers of digital transformation of the economy and society. The structure of universities, their technological parks and business incubators, together with teachers will contribute to the formation and establishment of university youth startups.

4.5. Decent work and economic growth (SDG 8)

Presently, in terms of human potential, the gap of Dushanbe city from the national level remains at a stable level, exceeding the average level by about 16%. The relatively high level of education of the population of Dushanbe is an important resource for the promotion of "*smart*" technologies and solutions.

At present, the efforts of the Executive Public Authorities of the city are directed at activating the processes of investing in human capital to help people learn new and valuable skills. It is expected that skills development will be oriented to the current and future needs of the labor market. There will be an increased emphasis on supporting programmes and schemes to expand the provision of skills and the entrepreneurial ecosystem, both in wage employment and for self-employment.

Generally, in the mid-term, the city's efforts to provide decent employment will be based on consolidated activities, taking into account the implementation of the following sectoral and departmental programme documents, but in the context of growing penetration of "*smart*" technologies and solutions, which will be characterized by breakthrough city initiatives:

- The mid-term programme of productive employment development within the framework of the first stage of implementation of the Concept of Productive Employment Development in the Republic of Tajikistan, for the period up to 2040 (dated May 28, 2022, No. 263);
- The mid-term programme to promote employment of the population of the Republic of Tajikistan, including for 2023-2025 and subsequent periods;
- National Programme for Social Development of Youth in the Republic of Tajikistan for 2022-2026;
- National Plan of Action to Prepare Tajikistan for Ratification and Implementation of the Convention on the Rights of Persons with Disabilities;
- Vocational training programme for citizens of the Republic of Tajikistan for 2021-2025.

Only about 10% of the country's employed population is concentrated in Dushanbe, with 24% of the country's tertiary-educated population working in Dushanbe.
The number of employed persons in the economy of Dushanbe increased by 95 thousand people, from 223.4 to 318.3 thousand people in 2015-2023; the average annual growth rate is about 1% (excluding a significant growth in 2020, when the territory of the city was expanded). In view of the city's population growth, the demographic burden on the employed is increasing; accordingly, efforts to ensure employment growth are accompanied by an improvement in the quality of employment.

Diagram 39. Ratio of the number of dependents (under and over working age) to employed in Dushanbe city, %

Source: Population and Housing Census of the Republic of Tajikistan 2020. Volume 7. Occupations and types of economic activities of employed population of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023.

The sectoral employment has changed and is increasingly associated with the service sector, both among men and women. The objectives for the mid-term period are related to the further modernization of employment types and the creation of new jobs in technological but labor-intensive sectors of the economy, accompanied by productive employment.

Diagram 40. Sectoral structure of employment of the population of Dushanbe city, % (2020)
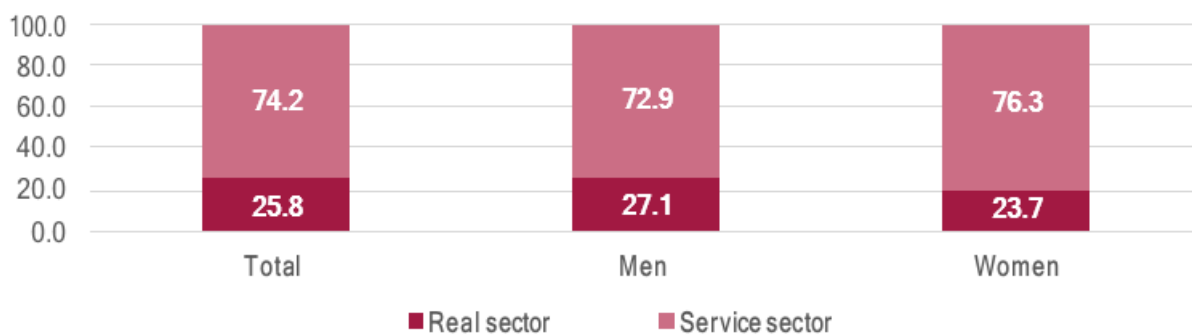
Source: Population and Housing Census of the Republic of Tajikistan, 2020. Volume 7. Occupations and types of economic activities of employed population of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Technological but labor-intensive employment is increasingly linked to the growth and development of manufacturing in the city.

The relatively high level of education of the employed population of Dushanbe is a potential for the development of knowledge economy, taking over and spread of *"smart"* technologies and solutions. More than 32% of the employed are persons with higher and postgraduate education (for comparison: on average in the Republic of Tajikistan this group is only 10.3%). However, there is still a small gap between employed men and women in terms of higher education.

Diagram 41. Structure of the employed population of Dushanbe city by level of education, % (2020)

Chart data:

|	All Employed	Employed Men	Employed Women
below secondary general	20.3	18.6	22.9
secondary general	34.6	34.4	34.8
secondary vocational	12.6	12.2	13.2
higher education	32.6	34.9	29.1

Source: Population and Housing Census of the Republic of Tajikistan, 2020. Volume 7. Occupations and types of economic activities of employed population of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023

To support higher education, programmed actions in Dushanbe will focus on approaching the high wage and job quality expectations of highly educated workers.

The inevitable decline in demand for low-skilled labor in the mid- and long-term will lead to the need for a large number of workers to change jobs.

The qualification structure of employment, reflecting the educational level and skills of the population, characterizes the demand for certain skills in the conditions of the existing production and technological structure of the city's economy - so far one third of the employed are associated with unskilled work, particularly among women.

Diagram 42. Qualification structure of employment in Dushanbe city, % (2020)

Chart data:

	Men	Women
Unskilled workers	31.6	36.3
Skilled workers	65.4	61.2
Managers		

Source: Population and Housing Census of the Republic of Tajikistan, 2020. Volume 7. Occupations and types of economic activities of employed population of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023
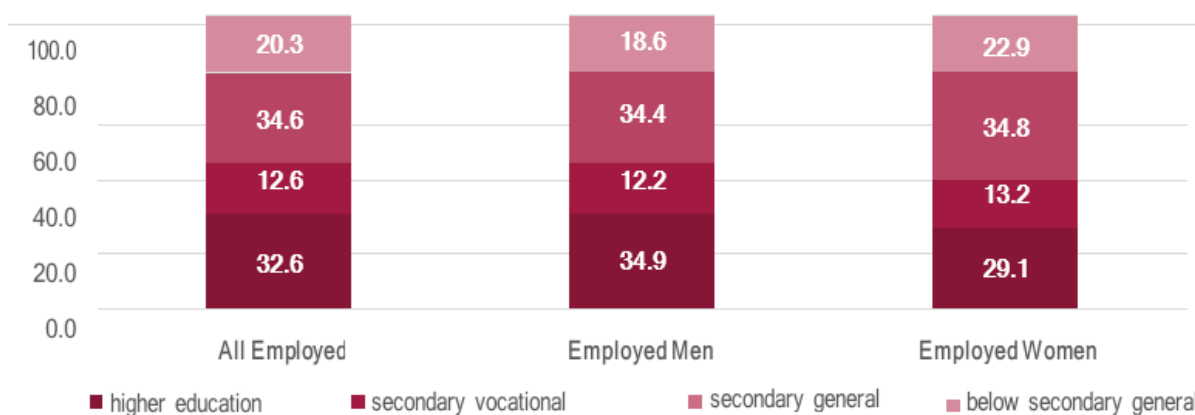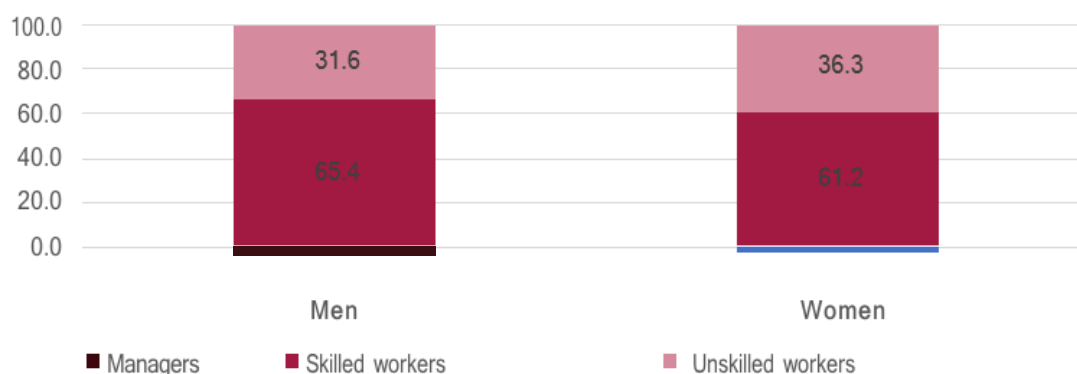
In the long term, the growth of investment activity will also be related to the qualification structure of employment. Expected large-scale infrastructure construction (including in view of the city expansion) will contribute to the growth of employment in this sector of the economy. Addressing the shortage of productive jobs should be linked to promoting private sector activity, strengthening market institutions and quality infrastructure.

Employment in the private sector continues to grow, due to both privatization processes and the development of entrepreneurship. Dushanbe leads in terms of the number of small businesses - the capital has 28.5 individual entrepreneurs per 1000 population. Efforts are being directed towards creativity and entrepreneurship, creating a dynamic and competitive economic environment.

There is a progressively increasing trend in the number of women in managerial positions in the city; at least one third of managers at enterprises and organizations of the city are women.

Diagram 43. Share of women in the qualification structure of employment in Dushanbe city, % (2020)
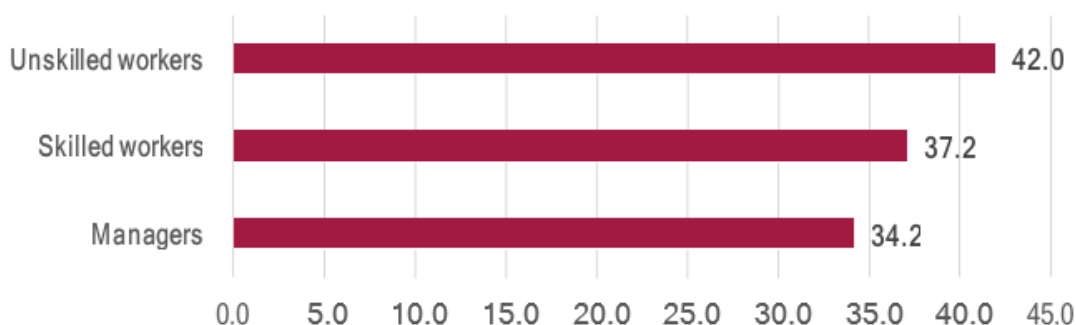
Sources: Population and Housing Census of the Republic of Tajikistan 2020 – Occupations and types of economic activities of the employed population of the Republic of Tajikistan. Volume 7, Agency on Statistics under the President of the Republic of Tajikistan, 2023

From a gender perspective, young girls are still less represented in the labor force. Actions are being taken to increase productive female participation in the urban labor market, including by promoting increased enrollment in vocational education.

Diagram 44. Labor force participation rate of young people aged 15-24 years in Dushanbe city, (2020)

Sources: Population and Housing Census of the Republic of Tajikistan 2020 – Occupations and types of economic activities of the employed population of the Republic of Tajikistan. Volume 7, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Meanwhile, the issues of reducing the unemployment rate in the city are one of the main tasks, specifically among young people. The unemployment rate in the city in 2020 was 15.4%, the unemployment rate among the population aged 15-24 years is significantly higher than among the rest of the population. The actual unemployment rate among young people aged 15 - 24 in 2020 amounted to 25.2%.

Diagram 45. Unemployment rate among young people aged 15-24 in Dushanbe city, (2020) (UMF-27)

Sources: Population and Housing Census of the Republic of Tajikistan 2020 – Occupations and types of economic activities of the employed population of the Republic of Tajikistan. Volume 7, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Box 6. *"Smart"* technologies in addressing employment challenges. (based on multi-stakeholder discussions, with the participation of civil society):

Actions such as supporting economic clusters, promoting transport infrastructure connecting markets, using public procurement to promote innovation as well as climate change adaptation, managing social services, skills development, lifelong learning - can make an important contribution to the realization of Dushanbe's key priorities.

Labor productivity as an indicator reflecting efficiency as a result of the functioning of the economy in the city of Dushanbe is higher than the national average.

Diagram 46. Level of labor productivity (volume of added value per 1 employed person), thousand US dollars.
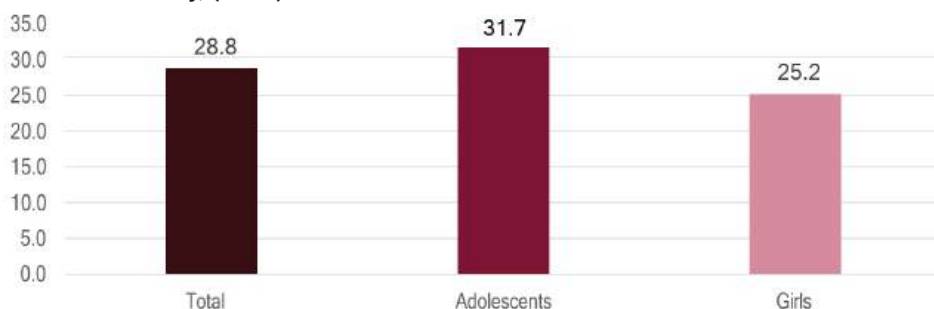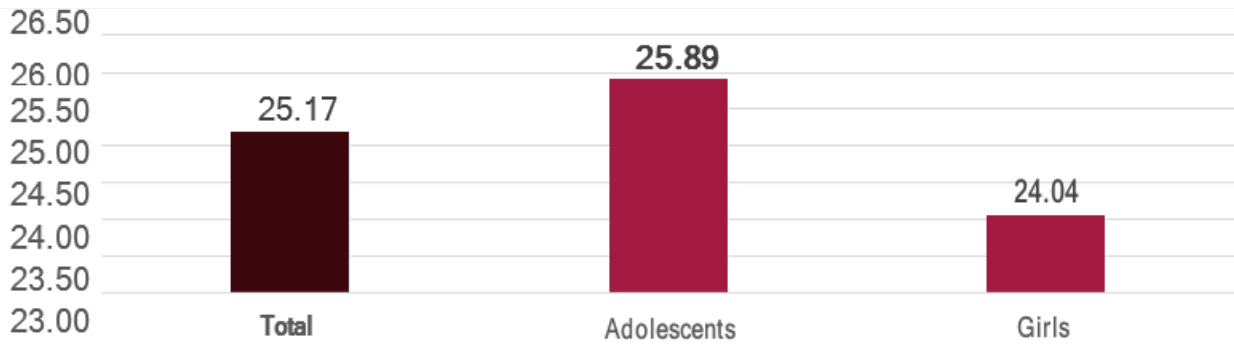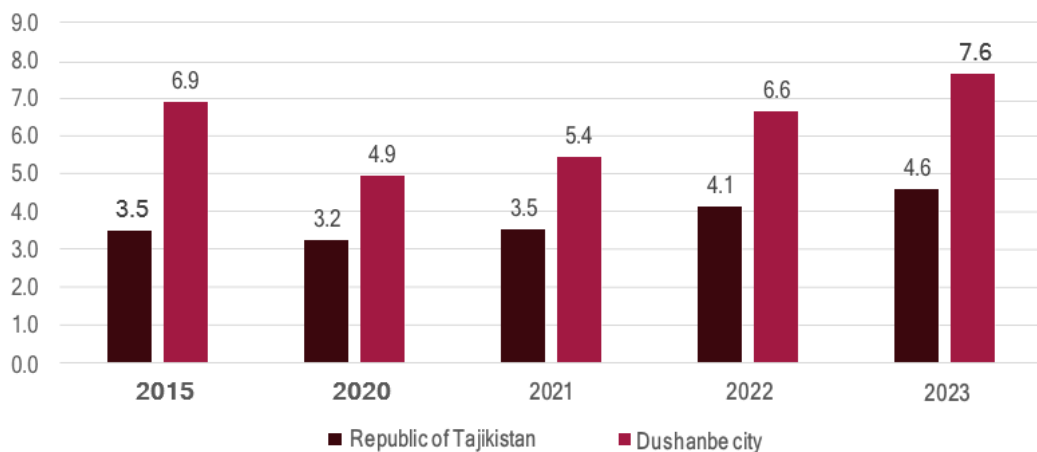

Sources: Population and Housing Census of the Republic of Tajikistan 2020 – Occupations and types of economic activities of the employed population of the Republic of Tajikistan. Volume 7, Agency on Statistics under the President of the Republic of Tajikistan, 2023

Labor productivity in Dushanbe city has been growing. Only in 2020, due to the COVID-19 pandemic, economic activity in the city slowed down, but was still in the positive range. Looking forward, efforts to increase economic activity will be coupled with increasing educational attainment, contribution of innovation to growth and development.

Diagram 47. Annual growth rate of real GRP per person employed in Dushanbe city, % (SDG 8.2.1.)
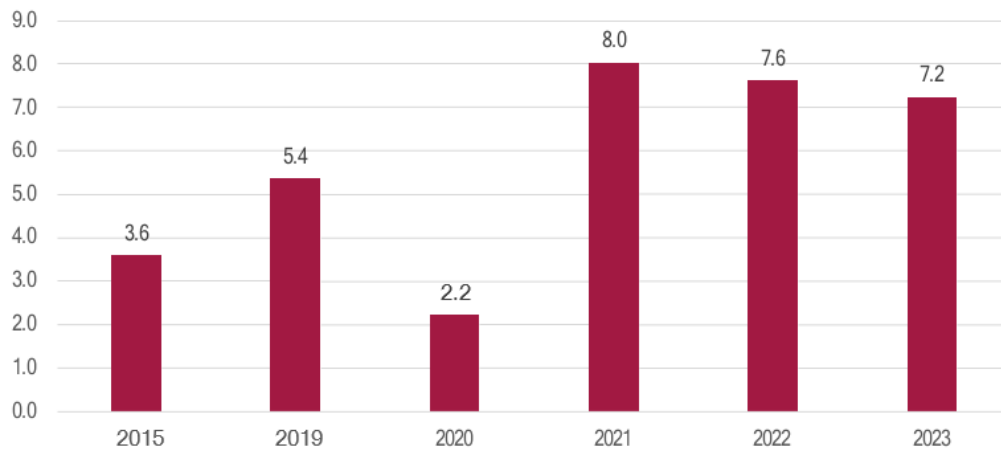
Source: Calculated based on the Statistical Yearbook of Dushanbe city, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023

Despite the territory expansion and population growth, GRP per capita growth rates remain quite high. In addition, in the future, the increase in GRP per capita will be accompanied by an increase in the living standards of the population and will be increasingly socially significant.

Diagram 48. GRP per capita growth rate in Dushanbe city, % (SDG 8.1.1.) (UMF-31)
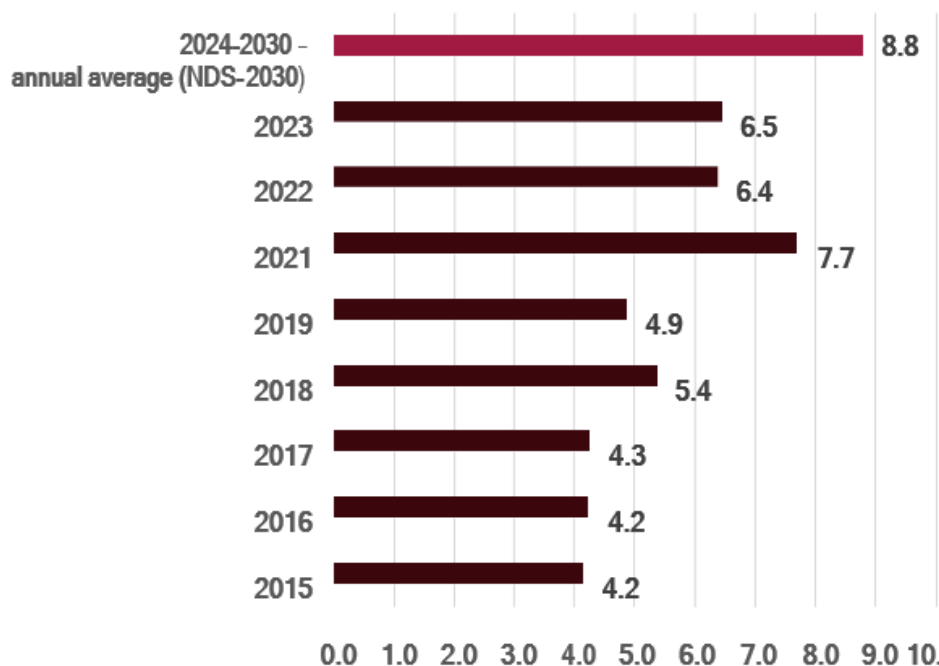
Source: Calculated based on the Statistical Yearbook of Dushanbe city, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023

Dushanbe city has a significant potential in terms of growth of the density of economic activity (in millions of dollars per sq. km.) (including the expansion of the territory, growth of economic activity in previously rural areas). Prospects are associated with a significant increase in economic activity, increasing efficiency and impact of activities.

Diagram 49. Density of economic activity in Dushanbe city, million US per dollars per sq.km.
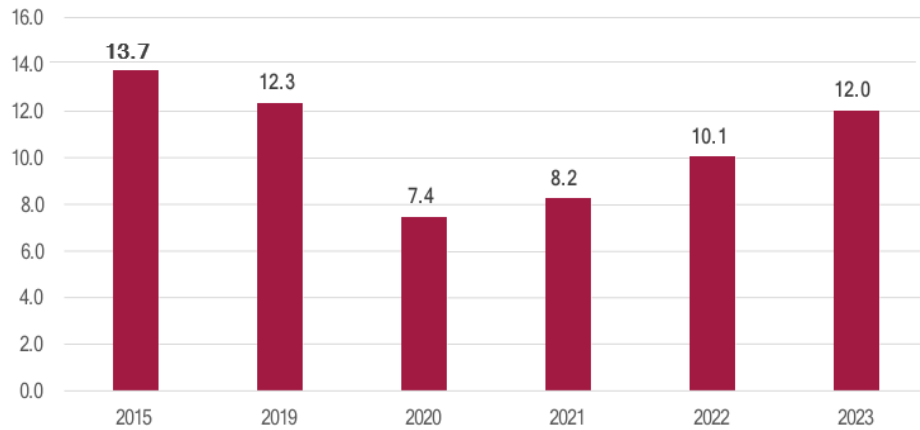
Source: Calculation based on the Statistical Yearbook of Dushanbe City, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2024

At the same time, promotion of rational spatial distribution of spheres of labor application and diversification of economic activity, consistent with the internal and external priorities of the city will increase.

Given the high density of the population in Dushanbe, which has reached over 6,119 people/sq. km, infrastructure constraints will not allow this potential to be converted into an actual utilized resource, so in the mid-term, much emphasis will be placed on the growth of infrastructure capacity. Over the last ten years, the main efforts of the city administration have been focused on extension of public transportation lines, increasing the average density of the transportation network.

With respect to human density and quality, efforts will be focused on the development of the city's transportation infrastructure.

Investments in fixed assets remain an important factor of economic growth. The volume of capital investments to GRP averages 18-20%. In view of the plans to build up the city's economic potential, efforts will be focused on the growth of capital investments.

Diagram 50. Volume of capital investments to the volume of GRP in Dushanbe city, %
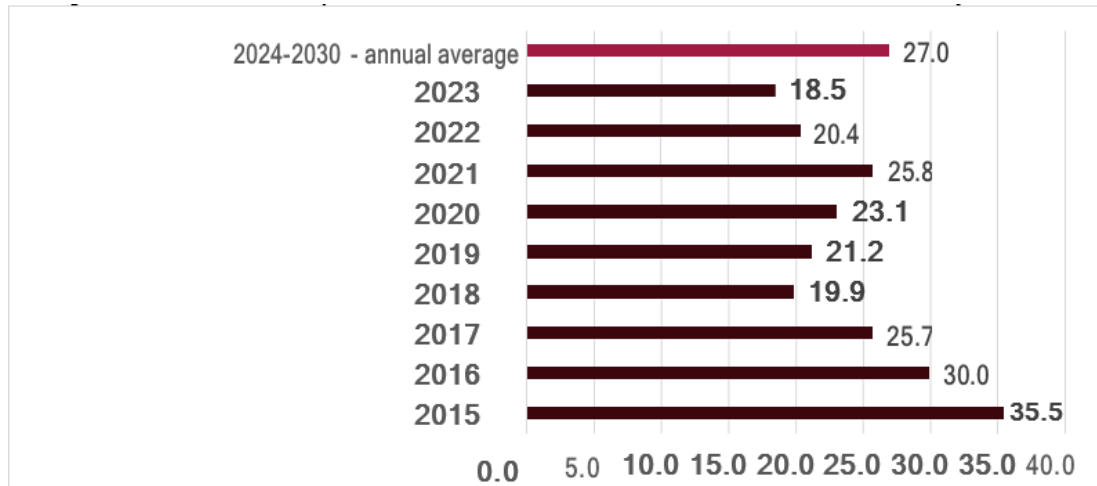
| Year	Value
2024-2030 - annual average	27.0
2023	18.5
2022	20.4
2021	25.8
2020	23.1
2019	21.2
2018	19.9
2017	25.7
2016	30.0
2015	35.5

Source: Statistical Yearbook of Dushanbe City, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023

As an economic engine and innovation center of the country, Dushanbe city generates a significant share of the country's GDP (20%) and hosts many leading industries, enterprises and institutions.

Dushanbe is currently developing an innovation cluster that promotes the creation of startups and companies that can ensure the technological sustainability not only of the capital, but also of the country as a whole.

The construction, trade, transportation and industry sectors make the largest contribution to the city's GRP growth.

Diagram 51. Structure of GRP in Dushanbe city in 2023, %

- 8.6
- 20
- 18.3
- 10.6
- 42.5

■ Other Sectors ■ Industry ■ Construction ■ Trade ■ Transport
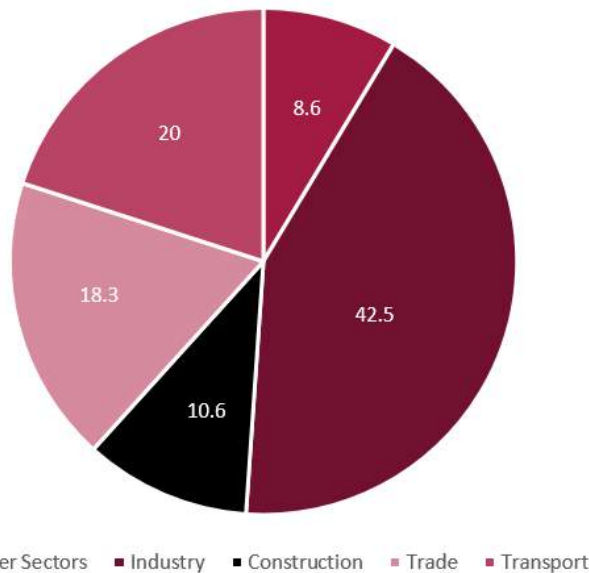
Source: Agency on Statistics under the President of the Republic of Tajikistan, 2023

Dushanbe is a major financial center of the country. The city aims to grow an accessible banking infrastructure, which is an important starting point for accessing and therefore utilizing financial services. There are 41.4 ATMs and 241.4 terminal units per 100,000 adults in the city of Dushanbe. (SDG 8.10.1). By 2026, it is expected that the number of ATMs per 100,000 adults will increase by at least 5.9 units and terminals at sales and service outlets by at least 1.5 times.

From July 1, 2023, trade and service outlets of Dushanbe city accept payment by a single QR-code.

As a result of realization of the main objectives on diversity of financial products the number of account holders in credit financial organizations will increase and reach the figure of at least 95% of the adult population; the use of e-wallets will increase by 2.4 times, the total use of formal financial services (savings, loans, Islamic principles of financing and insurance) will increase by at least 50% and at least 60% of the adult population will use electronic payments. Consequently, the city will actively move towards financial inclusion.

In general, in the mid-term, the key to expanding productive employment and sustained economic growth will be a move towards a focus on the *"knowledge economy"* sector and the sustainable development and promotion of business activity.

4.6. Industrialization and innovation (SDG 9)

Dushanbe city contributes greatly to the implementation of the strategic priority of the country - accelerated industrialization. There are 762 enterprises in Dushanbe city, 93.7% of which belong to manufacturing industries. They form the backbone of the city's industry. Over the last seven years, 90 new industrial enterprises have been built and commissioned, which has provided more than 10 thousand new jobs.

Implementation of national goals and accelerated industrialization of the country, in order to implement the Presidential Decree No. 309 of January 6, 2022, *"To declare 2022-2026 as the Years of Industry Development"*. It is envisaged to build and establish 71 industrial plants and enterprises in Dushanbe, with the creation of more than 5 thousand new jobs. As of December 1, 2023, 42 enterprises have been built and commissioned, and more than 3.8 thousand new jobs have been created.

In order to support the development of production in the city, including through the provision of soft loans, during the four years of operation of the State Institution *"Fund for Support of Production Entrepreneurship of Dushanbe"*, over 220 million somoni in soft loans were provided to economic entities, which also contributed to the creation of 54 production enterprises with 3,200 new jobs.

Industries introduce modern technologies and modernize production facilities in the capital to improve environmental performance.

The combination of many universities and start-ups offers the city's enterprises not only a good start, but also a huge potential for growth - realizing economically, making changes in production processes to introduce innovative solutions for less environmental pollution. A coherent focus on consistently improving the business climate and developing mechanisms to support targeted innovation is essential to sustain growth in Dushanbe in the mid-term perspective.

The growth rate of the manufacturing industry in Dushanbe demonstrates stable positive dynamics (only in 2020, due to the situation with COVID-19, production volumes were reduced). Overall, however, due to the average annual growth of production volume at the level of 10.5%, the share of the industry in the GRP of the city has increased from 5% in 2015 to 9% (by the end of 2023) for almost ten years period.

Diagram 52. Growth rate of manufacturing industry in Dushanbe city, %
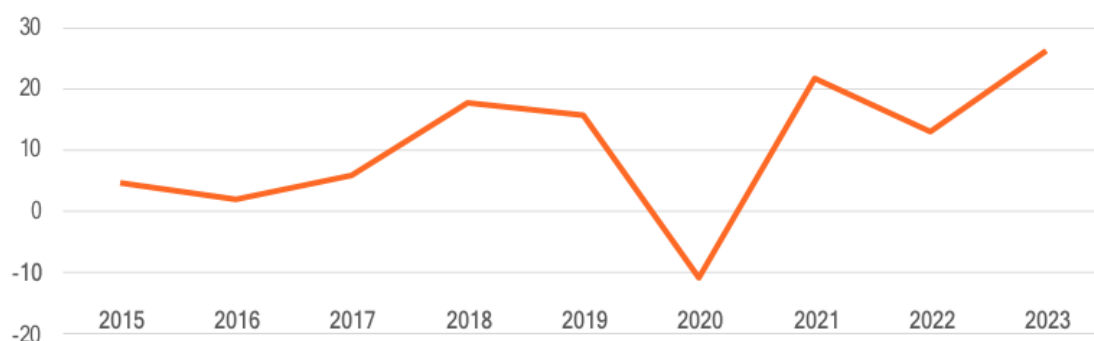
Source: Statistical Yearbook of the City of Dushanbe, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan

Meanwhile, per capita added value created in the manufacturing industry has also increased; it increased by almost 1.2 times over the period 2015-2023.

Diagram 53. Added value created in the manufacturing industry of Dushanbe city, per capita, in US dollars (SDG 9.2.1).

Source: Statistical Yearbook of the City of Dushanbe, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan

The manufacturing industry in Dushanbe city contributes to the growth of productive employment. The efforts to develop manufacturing industry are linked to a set of actions - building and developing skills for competitive manufacturing, technological support, financing innovation, infrastructure development and the provision of a variety of public goods in the city.

Diagram 54. Employment in the manufacturing industry in Dushanbe city, as a percentage of total employment (SDG 9.2.2)
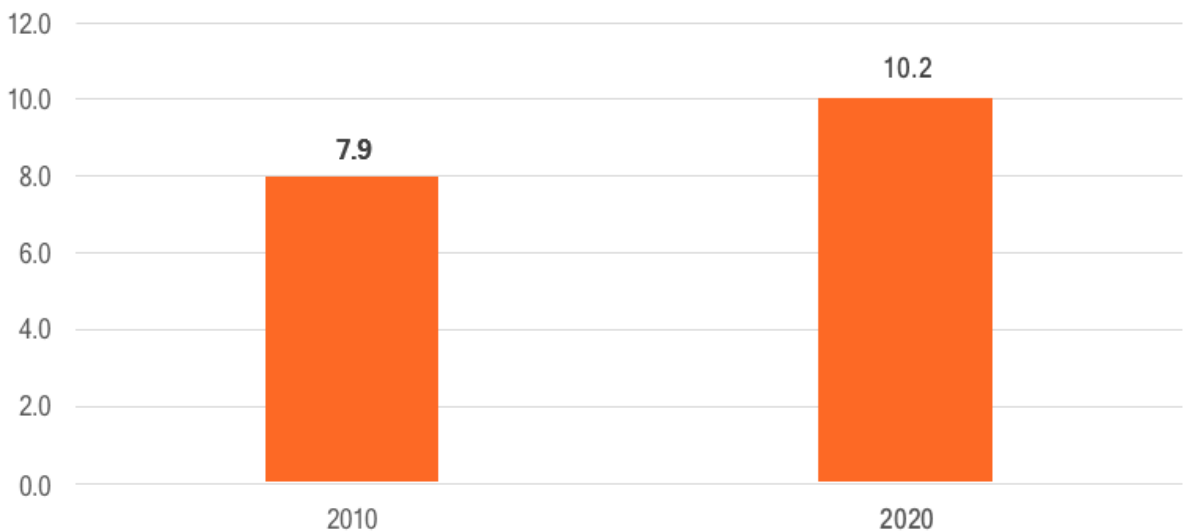
Source: Population and Housing Census of the Republic of Tajikistan. Volume 7. Occupations and types of economic activities of the employed population of the Republic of Tajikistan, Agency on Statistics under the President of the Republic of Tajikistan, 2023

In the long term, the development of the manufacturing industry will be accompanied by the growth of capacity, ensuring the growth of competitiveness of products.

Improvement is expected in the implementation of innovative practices in industry. 0.01 percent of GDP was allocated to research and development, but this volume has to increase several times by 2030.

- The density of scientific and research personnel in Dushanbe city is slowly but consistently increasing
- if in 2015 they constituted 0.03% of the country's population, in 2022 - already 0.4%. The number of research specialists engaged in research and development in 2022 increased by 1.2 times compared to 2015.

Diagram 55. Number of research specialists in Dushanbe city engaged in scientific research and development, per 1 thousand people (SDG 9.5.2)
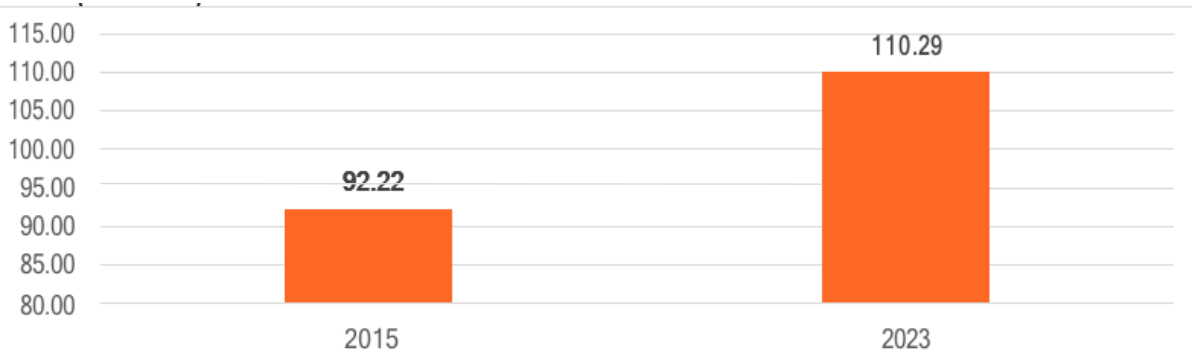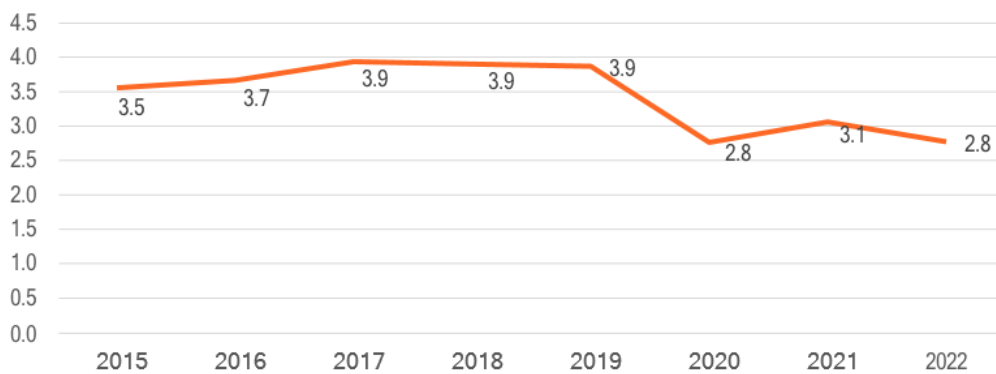

Source: Statistical Yearbook of the City of Dushanbe, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023

At the same time, the efforts are aimed at increasing the average salary level in the science system of the city, with a steady increase in the average salary level in the city, which will incentivize the quality of scientific developments. The programme actions are directed at increasing the efficiency of their use. It is expected that scientific and research structures will make a greater contribution to the implementation of strategic priorities of the country and the city.

As the city expands, the emphasis on the rational use of the city's land resources is growing. The city has active processes related to the development of industrial zones, where all necessary conditions have been created and communication lines have been laid. In other words, the city plans to develop industrial zones, which, as engines of local development, will

be associated with the provision of necessary infrastructure.

The Executive Public Authorities of the city have a strong focus on supporting the development of research and development in the private sector. And the prospects are associated with the growing importance of data analysis for monitoring and evaluation of initiatives to support productive innovations. One of the key tasks is the creation of new production facilities. In the context of increasing penetration of digital technologies, innovations in the industrial sector of the city will become a priority mechanism of technological breakthrough in strategic industries, ensuring technological security, long-term national

competitiveness and sustainable economic development of the city and the country.

It is expected to implement a set of coordinated and consistent measures aimed at:

- Equipping industrial enterprises with new modern digital technologies;
- Establishing the production process by automating autonomous technologies;
- Equipping industrial enterprises and workshops with experimental equipment and creating a modern information system;
- Wider use of digital technologies in industrial processing through the introduction of robotics;
- Creation of a state information system for industry and implementation of B2B (business to business) and B2C (business-to-consumer) models;
- Providing logistics infrastructure for e-commerce;
- Informing industrial enterprises about the achievements in the field of intellectual and innovative property;
- Implementation of modern management systems and quality control standards, such as the international standard ISO 9001-2015 and ERP and CRP process management in the production process.

Along with this, point measures promoting specific enterprises or projects will be implemented to activate the digital modification of the city's industry.

In the long term, with significant growth and strengthening of enterprises, automation of production processes, implementation of distributed control and management systems, the potential of big data analytics and algorithms, decision-making based on artificial intelligence will be increasingly in demand. In this area, the contribution of research structures will be more significant. Measures to ensure close cooperation between scientific organizations, educational institutions and manufacturing enterprises of large and small businesses will be expanded.

5. CONDITIONS FOR ENSURING SUSTAINABILITY OF DUSHANBE CITY AND THE SYSTEM OF "SMART" SOLUTIONS (SDG 11)

5.1. Comfortable housing (Target 11.1)

The implementation of key commitments to promote adequate and affordable housing is a fundamental human right and a precondition for the sustainable development of the city. A high quality of life also means providing sufficient housing of appropriate quality.

Housing is both a challenge and a chance for success, as it represents an intertwining issue of social and economic development and environmental sustainability.

Basic indicators of housing conditions in the city of Dushanbe in the period from 2015 to 2023 show positive dynamics. According to the data of the City Department of the SAPRT, the total area of residential premises per resident (at the end of the year) increased by 17.3%, from 11.5 m² to 13.2 m² [xxiii]. The city holds leading positions in construction, is a leader in the volume of commissioning of residential buildings per capita. The growth rate of housing commissioning significantly outpaces the population growth rate.

Diagram 56. Growth rates of population and housing availability in Dushanbe city, % (SDG 11.3.1)

— population growth rate of the city, %

— housing availability growth rate in a city, %

Source: Calculated based on the Statistical Yearbook of Dushanbe city, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe city, 2023

Housing construction dynamics will grow, resulting in a housing availability of at least 17 sq. m. per person.

Diagram 57. Average housing availability per inhabitant in Dushanbe city
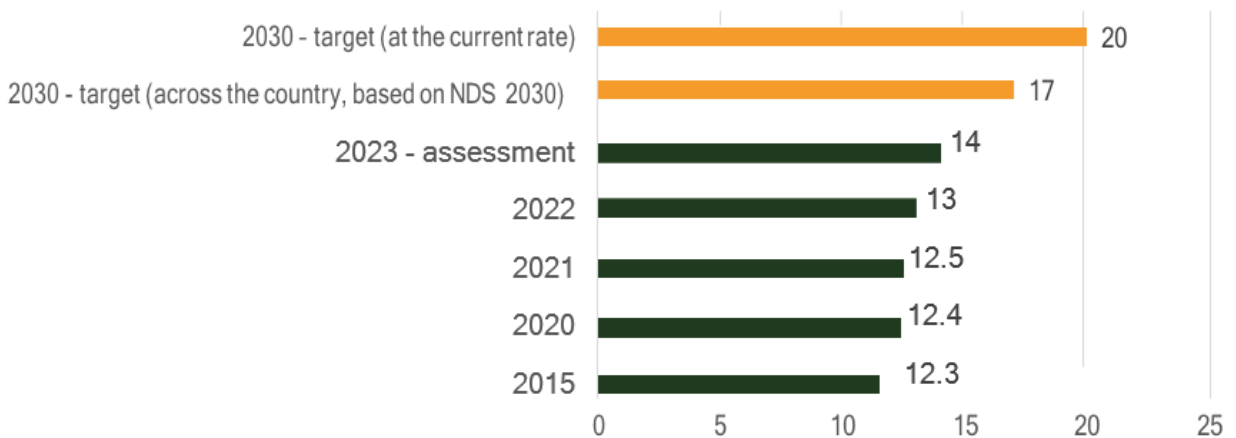
Source: Statistical Yearbook of Dushanbe City, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe City, 2024

There are tendencies of improvement of the housing of the city. Most of the housing is provided with water supply and water disposal (sewage), efforts are also aimed at significant increase of heating supply.

Population and housing construction growth rates, expansion of the city through nearby rural settlements cause the need for increased investment in the improvement of housing with utility services infrastructure. Accessibility of the city population to improved sources of drinking water (SDG 6.1.1.) is growing and amounts to 84% (considering the annexation of rural areas)[xxiv].

In order to improve water use productivity, meters for water use accounting

have been introduced, cubic meter tariffs for water supply services have been determined and kept at the same level for a long time, investments in infrastructure have been increased, and reforms to increase accountability and improve water management have been promoted.

Over the past seven years, a number of reconstruction and construction works have been carried out to provide the capital's inhabitants with heat energy and improve their living conditions in the cold season. During this period, the number of buildings and structures connected to heat networks increased from 1,530 to 3,200, which is 2 times more than in 2017.

In the long term, the share of working age population will increase, and it will be one of the main factors of dynamic growth of demand for housing in the city. New marriages form an additional demand for separate housing. Only in 2015-2023 more than 260 marriages were concluded annually, which significantly affects the demand for housing.

Addressing the problem of low-quality housing is high on the agenda of the Executive Public Authorities of Dushanbe city. The efforts have been made to improve the quality of housing; over the past years, housing construction has been more concentrated in the central part of the city. At the same time, all new buildings on the main avenues of Dushanbe city should be at least five stories high. This would increase the density in the urban cores of the center, which is already evident in the city, and should eventually lead to a compact structure. New buildings in Dushanbe are subject to mandatory seismic testing.

Meanwhile, social housing is being developed. The promotion of the concept of *"housing at the heart of everything"* as the first priority among the city's development priorities will be steadily increased. In so doing, public investment will be supported to ensure access to affordable housing and services, as well as public-private partnerships (PPPs) for the growth of affordable housing. It is estimated that to meet the demand for affordable housing in 2030, at least 50,000 affordable and accessible apartments will need to be commissioned to meet the needs of approximately 40% of the city's population.

Moreover, in recent years, the city's Executive Public Authorities have built up capacity and mechanisms to address the problem of uncompleted housing projects that have been abandoned (due to lack of funds from construction companies), which contributes to the growth of efficiency in the management of the housing construction process.

The growing size of the city partly explains the lack of infrastructure. The sewage system covers only almost 70% of the city's population but has already reached its maximum capacity. The city plans further expansion of the housing, which will increase the pressure on water, heating, sewageand energy supply, so efforts are already underway to address the infrastructure problems in housing. At the same time, the implementation of the package of actions on infrastructure renovation will be accelerated, which will make it possible to form an infrastructural framework for sustainable future development of the capital city.

The future development of housing construction highlights the development of

various financing schemes for the purchase of housing, including mortgage lending, streamlining the mechanisms of shared construction, industrialization of housing construction, reconstruction and development of engineering and technical support systems. Moreover, support for the development of the industry and production of construction materials will contribute to reducing the cost of new housing.

Taking into account the high population growth, the city's strategy is to construct many new buildings with the lowest energy standards and to upgrade the thermal qualities of the building stock, as well as to create renewable energy systems to transform energy sources. In order to prevent greenhouse gas emissions, active energy-saving measures will be taken in the housing sector. It is expected that through high-quality thermal renovation, energy consumption and thus greenhouse gas emissions will be reduced by almost two-thirds. Moreover, the construction of new residential complexes will be based on the principle of "smart" urban planning, which implies the creation of social infrastructure, in accordance with the size of the buildings.

Implementation of technological solutions, such as *"smart construction",* will cover the system of monitoring and operational management during construction; standards for construction of modern and efficient housing; new construction materials; a system of design documentation for construction; visual modeling of construction processes.

5.2. Urban mobility (target 11.2 taking into account SDG 9)

In order to implement the environmental policy of any large city, the priority tasks are qualitative transformations of the transport system aimed at ensuring clean air, reducing noise levels and significantly reducing anthropogenic emissions. In recent years, the Executive Public Authorities of Dushanbe city have been giving more and more priority to environmentally friendly modes of public transportation. To implement the programme "Green City" and improve the environmental situation, in accordance with the Resolution of the Government of the Republic of Tajikistan dated October 31, 2022 "State Programme for the Development of Electric Transport in the Republic of Tajikistan for 2023-2028", Dushanbe is implementing the *"Concept for the transition of passenger transport in the capital to the electric system for the period 2023-2026 "* (dated June 5, 2023).

Over the last decade, the number of private vehicles has been increasing by 9.2% annually. Motor vehicle availability is growing and since 2015 the level of provision has increased 1.2 times.

Diagram 58. Motor vehicle availability in Dushanbe city per 1 000 people, pieces.
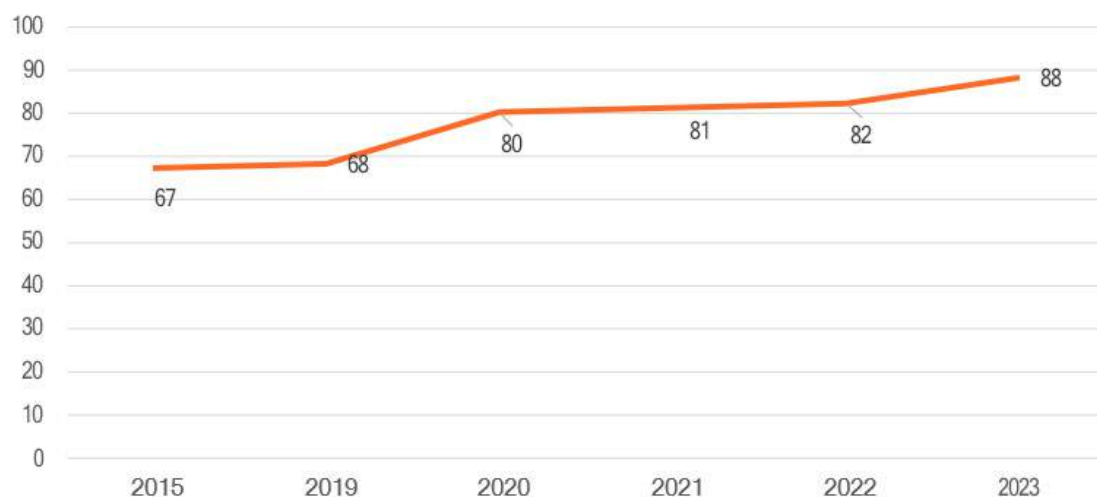
Source: Statistical Yearbook of Dushanbe City, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe City, 2024

As of 2022, about 102,000 vehicles were registered. At the same time, less than 44 per cent of registered vehicles have low emissions. If this rate of growth of private vehicles continues, the number of cars will almost double by 2030. Considering that Dushanbe is a major transport hub in the country, where not only vehicles registered in the city, but also vehicles from other regions move, the issues of traffic jams and the environment will increase, so the focus on these processes is increasing.

As the city expands, efforts are being made to improve road connectivity and quality. In 2023 alone, 16 kilometers of roads were constructed and commissioned in the capital. In the last seven years, 160 kilometers of roads and 2 flyovers have been constructed, helping to improve transport connectivity in the city.

At present, legislation restricts the import of old cars and encourages the import of new cars (by reducing customs duties by 50 per cent),

including electric vehicles, which are completely exempt from customs duties and taxes. Efforts are being made to create mechanisms for the introduction of the best available technologies, which will lead to improved air quality. By 2024, in order to implement the concept of electric transport, 2,960 electric vehicles will be imported in cooperation with rental companies and entrepreneurs, representing 68 per cent of the total number of rented cars. 167 units of chargers and equipment have been installed in the city to service electric vehicles.

The number of passengers transported by public road transport will increase by a cumulative factor of 1.5 between 2015 and 2023. (SDG 9.1.2).

The Executive Public Authorities of the city implement measures to modernize and upgrade the rolling stock. In the city of Dushanbe (as part of the development of public transport) there is a gradual phase-out of private own minibuses (shuttle buses) and modernization of the fleet of public buses. As of the beginning of 2024, there are only 6,670 units of public transport in the city, including 763 units of public transport of public services, 1,557 units of private minibuses and 4,350 units of cabs. [xxv]

During 2017-2023, 578 buses, 104 trolleybuses, 30 electric buses were obtained (purchased) and commissioned and more electric buses are planned to be commissioned in 2024-2025. By September 1, 2025, the passenger transport system of Dushanbe will completely switch to electric transport system.

Fare payment via the electronic system has been fully implemented on bus and trolleybus routes, and work has begun on the second stage of the project to implement this system on the lines of shuttle transportation. Since the beginning of the introduction of the electronic payment system and until the beginning of 2024, more than 923 thousand inhabitants and beneficiaries have received plastic cards for the use of passenger transportation services.

However, in order to improve the level of public transportation service, the capital has introduced an electronic navigation system for public passenger transportation, equipment for "GPS tracker and a sensor for calculating passenger flow and determining the actual cost of diesel fuel, a fuel consumption sensor has been installed in all buses and trolleybuses, and 10 electronic information boards with modern technology and equipment have been commissioned, considering the time, traffic and number of public routes.

Presently, 236 public buses (46% of the total fleet of public buses) are equipped with communication equipment, and the full and timely operation of vehicles is reflected in the website application nimbus.tj.

Efforts are being made to introduce 'smart' public bus stops, equipped with video surveillance and where passengers can charge their mobile devices, use Wi-Fi and check the timetable of transport passes.

Increased investment in zero-carbon transport will be accompanied by improvements in the convenience, accessibility, efficiency, safety and sustainability of the city's transport systems.

Universal road design and active mobility. Starting from 2016, the Executive Public Authorities of Dushanbe city have been

implementing universal road design principles in order to improve pedestrian accessibility and reduce traffic jams on the roads. So far, these efforts have been focused on the central parts of the city. In 2023-2024, work is underway to modernize major roads and sidewalks in different parts of the city in order to bring them in line with universal urban design standards.

With the growth of Dushanbe and the development of the city's infrastructure, the number of motor vehicles inevitably increases, and the motorization of the population of Dushanbe is projected to increase by at least 15% by 2030. To manage the load on the transport network, the city's transport scheme will be reorganized, and public transport will be consistently developed (improving comfort, quality and popularity, increasing the number of routes).

Over the next three years, 40 kilometers of roads will be built and commissioned in Dushanbe. The issue of financing the project for the construction of a metro in the city in the future is under consideration.

Comfortable movement around the city by motor vehicles will be ensured by the construction of multi-storey parking lots. In addition, in order to strengthen the transport infrastructure, the coverage of public transportation will be increased from 30% to at least 40%. Additional charging stations for electric vehicles will be created in the coming years.

Zonal parking system. In order to address traffic jams and reduce incentives for personal vehicle use, the city is developing a system of zonal parking fees.

Since mid-2024, automated paid parking lots have started operating in Dushanbe. The main goal is to streamline parking and reduce traffic jams on the capital's roads. The paid parking lots are in several places in the city where erratic parking is most often observed. Fines are stipulated for parking in prohibited places, improper parking, obstructing the use of parking spaces.

Modern multi-storey parking lots (over 7 floors) have been built near major markets of the capital, and this process continues.

> **Box 7.** "*Smart*" solutions. Making urban mobility safer, more accessible and sustainable requires a dual approach based on improving public transport systems and encouraging non-motorized modes of transport, such as pedestrians and cyclists, as well as public transport systems, with special attention to the most vulnerable road users. A prosperous city seeks to reduce motor vehicle use by improving the quality of other public and non-motorized transport systems.

The city will prioritize the development of modern management of road infrastructure and transport with a nucleus - traffic management center and transport management center of the city, where projects on creation of "*smart*" traffic lights, regulated crosswalks will be implemented. Along with this, the infrastructure for non-motorized transport for cycling and walking will be developed. The integrated traffic planning in Dushanbe will be a key mechanism in the process of developing and providing affordable "smart and green" solutions for the environmental conditions of the city.

5.3. Energy supply (taking into account SDG 7)

The biggest challenge for the energy sector is to provide the city with enough sustainable energy, despite growing demand for electric energy, population growth, e-mobility and digitalization 100% of the population of Dushanbe city have access to electric energy (SDG 7.1.1).

A functional and reliable energy supply is important for the city. The quality of energy consumption of all end-users (such as transportation, private households, industry and services) will be improved.

Following the implementation of an automated electric power control and metering system, the city's electric power losses have decreased from 27 percent in 2017 to 8.5 percent in 2023, and its service charge collection is entirely cashless.

As part of the implementation of the Strategy for the Development of Green Economy in the Republic of Tajikistan for 2023-2037, Dushanbe city takes actions to place a wide range of energy-efficient and energy-saving technologies, solar panels on the roofs of buildings, which in turn are built on the principles of green building, which will consistently create a comfortable atmosphere and climate, without the use of traditional heating and cooling systems.[xxvi]

The city development target is related to reducing energy consumption in buildings in order to make them affordable for inhabitants and make the economy more attractive. The smart city planning approach will be based on the energy aspect. That is why urban technology will play a key role. The refitting of obsolete apartment buildings will be streamlined, targeting the local population to create affordable and accessible housing, while raising awareness and encouraging investment in green building.

Buildings constructed with relatively low energy consumption will predominate in the construction of residential apartments. The climate of Dushanbe city provides an opportunity for solar thermal systems and ground source heat pumps that can be connected to the existing and expanding district heating network. More importantly, decentralized district heating systems at the neighborhood level increase overall resilience to climate and other disasters.

There is a high potential for the integration of solar modules in open spaces, especially in building construction. In order to optimize the use of opportunities, the available roof area of buildings will be used in urban development projects and solar tenders. In addition, smart grids will reduce energy consumption and increase energy efficiency.

Since a large number of existing buildings were built ahead of requirements and therefore have the least potential for energy savings, the city is trying to reach out to create incentives leading to energy efficiency improvements.

At the same time, a growing urban population, combined with increasing incomes and higher temperatures caused by climate

change, will likely lead to an increase in the use of air conditioners. Accordingly, the efforts will be directed towards stimulating the supply and production of energy-efficient household equipment.

The Executive Public Authorities of Dushanbe city joined the Green Cities Programme in 2019, committing to develop a Green City Action Plan under the EBRD loan to modernize and rehabilitate the city's district heating system, which is now being actively implemented.

The upgrade of the city's street lighting will replace 2,377 working lamps with LED lamps and introduce additional features, including intelligent control and monitoring systems and the refitting of selected lamp posts to integrate electric vehicle charging points. Furthermore, street lights with integrated sockets for charging electric vehicles will save the installation of separate charging points and their connection to the electric power grid.

In the field of e-mobility, an additional 60 electric buses will be available by 2025, following the expansion of charging facilities.

It would be beneficial to consider the potential growth of new consumers (including those resulting from the expansion of the city territory) and the associated implications for the capital's electric power system, as well as heat supply systems. It may be helpful to enhance efforts to ensure an improved level of reliability and quality of energy supply.

The application of smart technologies and solutions will involve:
- large scale intensive digitalization of urban energy supply;
- introduction of intelligent energy metering systems;
- development of infrastructure for public and private electric transport;
- creation of automatic power supply control systems;
- Intellectualization of residential buildings and urban lighting.

5.4. Airborne emissions (Target 11.6)

The Republic of Tajikistan set an emission limit in its first Nationally Determined Contributions (NDCs): the unconditional target was to limit emissions to 80-90% of the 1990 level of greenhouse gas emissions, and the conditional target was to limit emissions to 65-75% of the 1990 level of greenhouse gas emissions. The unconditional target, expressed in per capita terms, was 1.7 to 2 tons of CO2 equivalent by 2030. The conditional target, expressed in terms of per capita emissions, was between 1.4 and 1.7 tons of CO2 equivalent by 2030. [xxvii]

Monitoring of pollutant emissions by pollution source on an annual basis is performed only for stationary sources.

In addition, scientific research on the relationship between urban air quality and morbidity, both respiratory, cancer and cardiovascular, is supported.

Emissions from transport are expected to increase and, unlike central heating, will be a year-round environmental problem.

Accordingly, the process of controlling vehicle emissions and quality assurance against environmental standards and regulations will be strengthened.

The effect of *"heat islands"*, which are located in the city center with tall office buildings, paved areas, little open land, green spaces and water surface, will be regulate. These areas are posing threat to the employees of numerous government offices, banks and other offices located in the city center if they are not equipped with air conditioners.

It is expected that the largest reduction in annual average pollution PM 2.5 (by 2 mcg/m3) can be achieved in the household sector (improved heating in households). Overall, emission reduction policies will be coordinated across sectors and stakeholders, including urban mobility/transport management, sustainable domestic heating, industrial development and the restoration of a sustainable landscape with urban greening.

5.5. Waste management (Target 11.6)

According to the decision of the Chairman of the City of Dushanbe, the year 2024 was declared the *"Year of Environmental Education"* in Dushanbe. The aim is to raise the population's awareness of environmental issues, maintain a clean environment, protect various environmental values and ensure environmental safety.

Dushanbe, a city dedicated to sustainable development, is pursuing a transition towards a circular economy. This could involve extracting value from waste materials by transforming them into resources for recycling.

The waste management system in Dushanbe city comprises the following stages: collection, transportation, processing, utilization and landfill disposal. Annually, 250-270 thousand tons of waste are generated in Dushanbe city, with the majority of this waste being taken to landfills. As a result, the volume of waste has been increasing year on year.

On the initiative of the Executive Public Authorities of Dushanbe city, waste collection points have been modernized. Along with this, efforts are aimed at ensuring that garbage is placed at waste collection points and that inhabitants strictly adhere to the culture of living in the city.

In 2024, a Centre for Permanent Control and Monitoring of Waste was established in the city with the installation of 50 video surveillance cameras. This has helped to reduce violations and improve the waste management situation in the capital. In Dushanbe, the garbage collection rate is 95%. In order to dispose of mercury-containing lamps, special containers for the collection of lamps have been installed in all districts of the city. The SUE *"Dushanbe City Solid Waste Landfill"*, whose primary objective is the timely reception and utilization of solid waste, in 2023 received and sorted 364 thousand tons of solid waste.

The lack of detailed and reliable statistical information on the amount of household waste and industrial and medical waste is a key problem of waste management in Dushanbe city. In most cases, the collected waste is not sorted. It is important to involve the public in solving the problems of waste collection, sorting and treatment. It is expected to develop and adopt national standards equivalent to advanced standards for hazardous waste management.

The challenges ahead relate to the development of a data management and monitoring system for solid waste management. Incentives will be introduced to encourage the establishment of enterprises for waste separation in households and industry, as well as for waste treatment, utilization and recycling. The introduction of household and commercial waste segregation processes will be a key focus to raise awareness and drive the implementation of waste treatment processes, which will help to reduce environmental and health impacts.

In the context of the implementation of the project *"Solid Waste Management and Recycling"*, which is being carried out by SUE "*Smart City*" with the support of the World Bank,

efforts will be made to develop and implement a landfill diversion system, including sorting, recycling and reclamation. In addition, the organization of recycling and reuse of waste from construction and demolition of buildings throughout the city will be considered, as well as the construction of a new sanitary landfill and the closure and rehabilitation of the existing landfill.

In general, solid waste will be managed in a strategic manner through recycling, appropriate treatment and disposal, and the application of standards that protect the public and the environment from contamination of air, water and land.

5.6. Formation of green areas, parks (Target SDG 11.7)

The Land Use Master Plan of the city identifies public green space on a per capita basis, up to a minimum of 10 square meters. The city is currently engaged in a significant undertaking to create a *"Green Belt"* around the city and enhance the urban landscape. The green belt has reached an impressive 20 thousand hectares. The plan is to continue this development until 2030, in six stages.

The greening of urban areas is a positive and dynamic process. The total area of general-purpose green spaces for the 2015-2023 period increased by 2 sq. meters per capita.

In the period between 2017 and 2019, 17 new cultural and entertainment parks and 57 park alleys were constructed in Dushanbe. The city streets were decorated and illuminated with national elements, thereby enhancing the leisure conditions for inhabitants and visitors to the capital city.

In order to improve the streets and avenues of the capital, 1.2 million trees and shrubs, along with 96.8 million seasonal and perennial flowers, are planted on an annual basis.

Over the past seven years, in order to enhance the diversity of rare trees from overseas, up to 42,300 ornamental, shade trees and shrubs have been imported and planted in select districts of the city.

Several greening programmes under the leadership of the Executive Public Authorities of Dushanbe city are under implementation. The combination of housing construction with the creation of small parks and squares will be aimed at ensuring that inhabitants live within a 15-minute walk of green spaces.

Water management will play a significant role in this process. The change from fountain sprinklers to drip irrigation is only part of the rethinking of irrigation. There will be an active change in the approach to greening, moving from flowers to multi-seasonal shrubs and creating unique landscaping standards.

Along with increasing the attractiveness of green spaces, climate protection and biodiversity will be important areas for action. It is envisaged to promote green roofs, protect healthy trees, increase biodiversity and build more environmentally friendly buildings.
In general, one of the most important decisions in the development of green spaces will be the integration of green space creation and natural habitat protection into all future planning processes.

06

6. CITY MANAGEMENT MECHANISMS FOR "SMART" AND SUSTAINABLE FUTURE

6.1. Development of management process (Target 11.3 and 11.5)

Development of platforms and communications with citizens. The population of Dushanbe is projected to exceed 1.5 million by 2030. In light of this, there is a need to develop the opportunities and potential of the city. To achieve this, the processes of introducing modern management principles and a system of mutually beneficial cooperation between the state and all stakeholders, including entrepreneurs, scientists, and civil society as a whole, will be intensified.

The capacity of the personnel of the Executive Public Authorities of the city is expanding. All civil servants have completed higher and postgraduate education. Additionally, the recruitment of younger personnel is facilitating the integration of digital technologies and fostering a relatively rapid uptake of innovative practices within the local development management system.

Diagram 59. Age structure of civil servants of the Executive Public Authorities of Dushanbe city in 2023, %
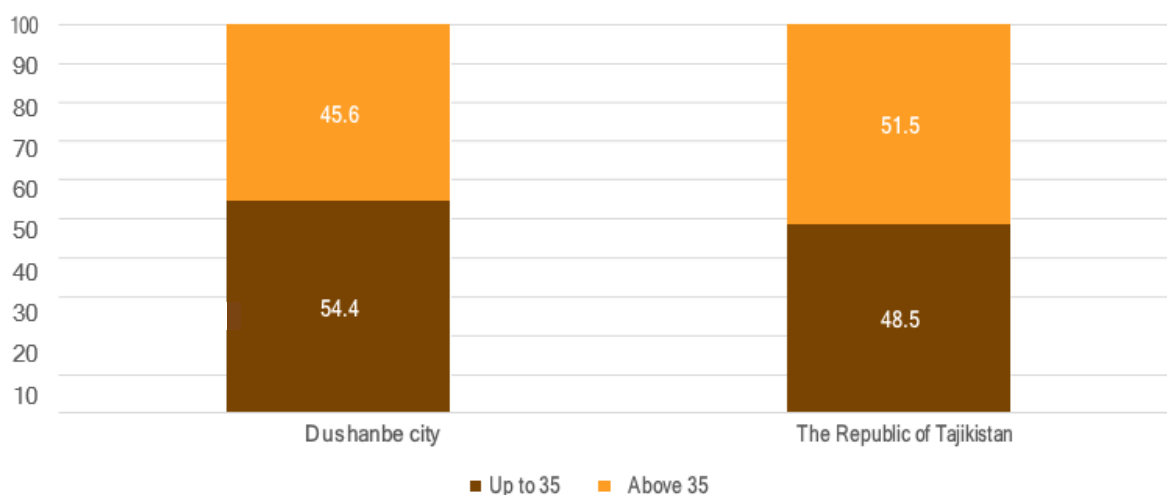
Source: Agency of Civil Service under the President of the Republic of Tajikistan, 2023

It is anticipated that the outcome will be a streamlining of activities to enhance the effectiveness of the city's social infrastructure resources, while also optimizing the architectural appearance of the capital and increasing the number of green areas.

The city has a sustainable practice of holding regular meetings between heads of subdivisions of the Executive Public Authorities and citizens to discuss decision-making processes. These meetings are held in an accountable and transparent manner.

In line with the implementation of the Law of the Republic of Tajikistan "On Appeals of Individuals and Legal Entities," the Chairman of Dushanbe has set the schedule for citizens to meet with the First Deputy and other deputies. A total of 5,844 appeals were received in 2023 from citizens. Of these, 3,381 were written appeals, 58 were submitted through the website of the Executive Public Authorities of Dushanbe city, and 822 were received from the Executive Office of the President of the Republic of Tajikistan and other authorities.

Additionally, 1,583 oral appeals were received via the hotline, which were duly considered and fulfilled within the established deadlines.

Of the total number of written appeals received by the relevant authorities and city structures, 5,809 were subjected to review, representing 99.4% of the total number of appeals received.

A total of 35 appeals are currently under consideration. In 2023, the city administration and officials received 2,232 citizens and sent specific instructions and directions to the relevant city and regional structures to address their problems and inquiries.

It is necessary to note that applications are accepted via e-mail address "dushanbe80@yahoo.com" and "Viber" and "Whatsapp," social media platforms of the Executive Public Authorities of the city. During this period, 437 applications and photo and video messages were received, which were reviewed, and decisions were made to correct the shortcomings.

The city administration strives to build the ability to systematically and constructively interact with citizens, private sector and other stakeholders. The work on strengthening the capacity of civil society institutions is very important for the city,

meetings of the city executive with the Public Council of the city, active groups of citizens and expert community are held.

The number of registered active public associations in the city is growing. In parallel, there is an increased emphasis on pooling efforts and resources to ensure that local achievements are included in national reports, which is closely linked to the role of public interest advocacy. Communication platforms will be strengthened to collect and analyze the most relevant and accurate data on the city's development.

Increasing the penetration of digital technologies in city management processes. With the aim of developing e-government, introducing the use of modern digital technologies and improving services in the direction of digital economy, a local network of the *"Electronic Document Management"* programme is being implemented along with the purchase and installation of modern server equipment, as well as the activation and launch of communication through centralized video communication (video selector) and session initiation protocol (SIP) between the structural units of the apparatus of the Executive Public Authorities of Dushanbe city and the Executive Public Authorities of the districts of Dushanbe city.

The activity of the official website of the Executive Public Authorities of Dushanbe city (www.dushanbe.tj) has been strengthened, where news and announcements, analytical materials and relevant decisions of the Chairman of Dushanbe city are published and available.

At the same time, in order to reflect various of activities held by the Executive Public Authority of Dushanbe city, especially the achievements of the capital in the direction of construction and presentation of the opportunities of the city, the official pages prepared, and relevant information regularly updated in the social networks such as *"Facebook", "Instagram" and "Telegram."*

The integration of digital technologies into urban design and management is becoming increasingly prevalent. Cities are increasingly adopting ICT infrastructure and smart solutions with the objective of supporting the integration and coordination of urban systems and processes, as well as enhancing the city's capacity to provide services that are centered on the needs of city inhabitants.

The primary strategic objective of the city is the establishment of a *"Smart City,"* with a particular emphasis on the creation of a convenient and accessible urban environment that is unified by a centralized platform of information systems. The creation of a "Smart City" is dependent on the development of information systems and, in general, information and communication infrastructure. These systems are a key component in the management of the city, monitoring all processes and facilities.

At the beginning of 2024 *"Electronic map of Dushanbe city"* is developed, within the framework of which the cartography is placed, works on defining the boundaries of the city, development of a two-dimensional map of the city and preparation of infrastructure, description and design of the system, research of all public institutions, formation of technical specifications, requirements for the software

part and formation of project documentation are carried out. The mobile application *"Active Citizen"* will be prepared on the basis of this map. With the help of this application citizens will be able to express to the authorities their attitude to the decisions made in various spheres of life of the city. This project will cover a wide range of issues, from administrative to infrastructural, related to almost all structural units of the Executive Public Authorities of the city.

At the same time, efforts will be focused on collecting and analyzing big data and on forward-looking forecasting, including the application of artificial intelligence.

Promotion of the project approach to ensure the development of the city. The project approach will be increasingly practiced in the process of coordinating the implementation of large and strategic projects in Dushanbe city, ensuring horizontal effective interaction of all involved organizations, collecting and analyzing information, preparing information on the progress of implementation, providing assistance in solving problematic issues.

In view of the expected further expansion of the city territory, the master plan will increasingly have a clear vision of the pace and scale of the city's growth in the future, will consider the current and possible challenges the city may face in its future growth, will be supported by investment programmes for the development of urban infrastructure and the availability of appropriate city services necessary for the implementation of development plans for the adjoining territories. Urban planning will take into account the resilience of the city.

The policies pertaining to climate change, disaster risk reduction and pandemic avoidance responses will be more dynamic.

Support in the process of policy implementation at the city level, including reflection of SDGs in documents. In order to facilitate the collection of data, monitoring and evaluation of progress towards the implementation of the SDGs, efforts and resources will be pooled.

In general, the introduction of technological solutions in the development of city management mechanisms will be associated with the smooth functioning of the system of interaction between the city inhabitants and the structures of the Executive Public Authorities , information openness of the administration of the city, mainstreaming of the strategic vision of the city development prospects.

Supporting the climate change adaptation system. The Executive Public Authorities of Dushanbe city is working to integrate climate change issues into the city's development programme, including through the implementation of the objectives set out in the national development programmes (SDG 11.5), which include:

- Mid-term Development Programme of the Republic of Tajikistan for 2021-2025 (from April 30, 2021)[xxviii], which specifies:

- *"establishment of a working group to make additions to strategies, programmes, regulatory and legal acts and social and economic development programmes of cities and regions of the country on climate change and disaster risk management issues"* (chapter 7, para. 9);

- *"integration of disaster risk reduction into urban and district development programmes"* (chapter 7, para 9);

- *"development of regional climate change adaptation plans"* (chapter 7, para 10);

- National Climate Change Adaptation Strategy of the Republic of Tajikistan for the period until 2030 (October 2, 2019, #482), which sets the task - *"mainstreaming of key climate change issues into national, regional and local planning processes"* (chapter 4, para. 81). [xxix]

- The National Disaster Risk Reduction Strategy of the Republic of Tajikistan for 2019 - 2034 [xxx] entails ensuring:

- *"development of the system of implementation of climate change and disaster prevention issues in programmatic regional documents, strengthening local capacity for disaster risk management"* (chapter 7, para. 58);

- *"integration of disaster risk reduction goals and objectives into sectoral strategies, programmes and strategic plans for the development of regions and districts, taking into account gender and the needs and capacities of people most at risk"* (chapter 8. para. 62).

Dushanbe city plays an important role in the processes related to the introduction of environmentally friendly government procurement procedures, introduction of requirements for climate and environmental safety, for goods and services procured in all sectors, including infrastructure.

The most important areas in the adaptation of the city to climate change are ensuring the reliability and safety of the functioning of production and transport infrastructure, buildings and structures, ecosystems, as well as ensuring the protection of public health (diseases related to climate change or intensified in extreme weather conditions; infectious diseases).

6.2. Financial support and assistance

Sustainable development of Dushanbe city requires mobilization of financial resources for development, as well as strengthening of the financing system, including public finance management.

Resource mobilization at the city level presents an invaluable opportunity for allocating funds to facilitate the implementation of the SDGs.

At the national level, the processes aimed at harmonizing strategic and budgetary planning are being implemented in order to more effectively implement urban investments. The Executive Public Authorities of Dushanbe city actively participates in this process.

The budget revenues of the city are increasing, but the development tasks are also expanding. However, the financing of the city also relies on private sources of financing.

Diagram 60. Dushanbe budget revenues and expenditures, % of GRP
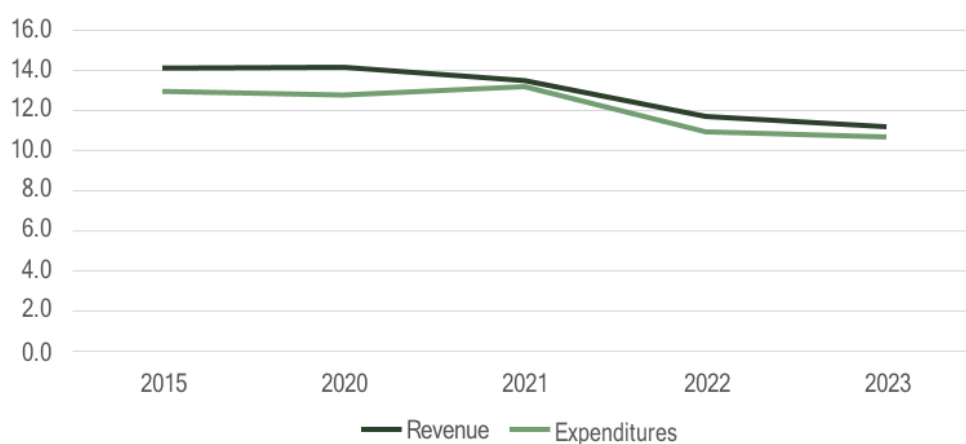
Source: Statistical Yearbook of Dushanbe City, Main Department of the Agency on Statistics under the President of the Republic of Tajikistan in Dushanbe City, 2023

In general, there is a need to develop a long-term investment strategy for Dushanbe city based on the basic socio-economic guidelines toward a "smart" and sustainable future.

The budget of the city for 2023 amounted to TJS 2.9 billion (about USD 267 million), which is 1.6 times more than in 2015. Local tax revenues make up a significant part of the city's budget (88% in 2023). The budget is distributed among the four administrative districts, and

a substantial portion of tax revenues are deposited into the general budget of the city. In the city budget, 94.5% of revenues are own revenues, which gives the Dushanbe city high sustainability and credit worthiness.

52.6% of the budget consists of social expenditures. This is the support of citizens, development of education and health care. 39% is allocated to the urban environment and investments.

Diagram 61. Dushanbe city budget expenditure structure, %
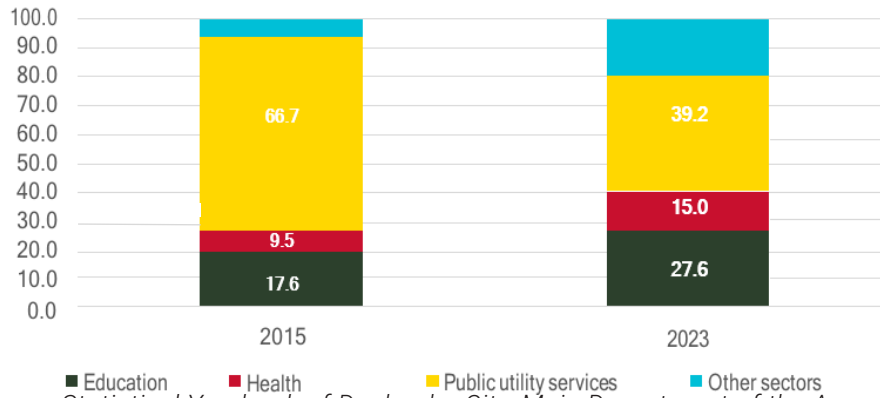

■ Education ■ Health ■ Public utility services ■ Other sectors

The Executive Public Authorities work to stimulate the inflow of finance into the city's economy, both external and internal, as well as the establishment of a holistic ecosystem for their attraction.

The growth of direct investments indicates that the city has the potential for further development. This provides the city with the opportunity for comprehensive development in all directions.

Diagram 62. Direct investment inflow into the economy of Dushanbe city, % of GRP
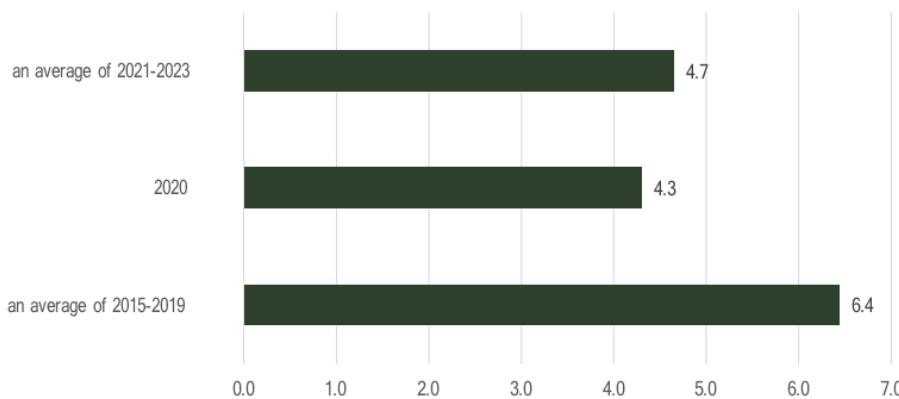
Taking into consideration the expansion of the city, the share and need for financing of infrastructure development is high. To improve validity and performance management, actions will be actively pursued to collect relevant data (e.g. on infrastructure), and sufficient information on the needs of cities.

Consolidation of urban investment projects aimed at achieving results in key areas

should lead to increased impact.

This will build local capacity to forecast the city's future revenues, which will allow planning long-term investment projects to develop the city's infrastructure and urban economy, which require significant capital investment.

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6.3. Partnership and consolidation of actions

Over the period 2015-2023, the majority (78%) of external donor funds in support of private sector development were disbursed at the national level and are more related to assistance in strengthening national capacities. Also important in the Dushanbe model of development cooperation is the collection and dissemination of practical knowledge, the use of effective knowledge sharing mechanisms in the areas of expanding productive employment, including job creation through the development of public-private partnerships (PPPs) and vocational training; the contribution of infrastructure, particularly transportation and energy, in reducing poverty and inequality; fundamentally strengthening the financial system, developing the capital market, and increasing sustainability; and the development of a new and more sustainable financial system, developing the capital market and increasing the sustainability of the banking system; promoting economic diversification; increasing resilience to climate change and ensuring food security; forming a preventive policy on the basis of a system of processing, production and implementation of modern analytical products.

The efforts of the Executive Public Authorities of the city are consistently aimed at increasing the capacity to realize the opportunities of the "*green*" and "*smart*" future of the city:

- Support of entrepreneurship development, promotion of business cooperation by knowledgeable centers of economic activity. The city has established the practice of cooperation between entrepreneurial structures and state authorities, provides assistance to the development of innovative entrepreneurship (technological parks are functioning at the leading universities of the city) and entrepreneurship development centers on the basis of business incubation (information, consulting, educational and methodological support of entrepreneurs has been intensified).

The number of operating individual entrepreneurs per 1 thousand people in the city is almost twice as high as the national average. It is expected that efforts to create integrated scientific and educational structures will be active in the city;

- Significant improvement of conditions for the development of science and education, including through international cooperation. Due to the existing objective circumstances, it is in Dushanbe city that the leading centers of national science and educational organizations are located, which interact with major foreign partner organizations and organize internships for students and teachers. The medical and pedagogical universities located in the capital have a significant number of foreign students. Research often involves collaboration with foreign partners, especially in the field of exact sciences. It is expected that the city will expand the base for receiving foreign students and scientists, building modern dormitories for their accommodation;

- Protection of urban infrastructure, adaptation to possible climate change. In carrying out such activities, the city looks to foreign experience in addressing similar challenges;

- Development of cultural centers, including those of international level. The Friendship and Cooperation Center of the Shanghai Cooperation Organization (SCO) operates in the city under the Academy of Public Administration under the President of the Republic of Tajikistan.

The city has the necessary resources: administrative support, legal and regulatory framework, and funding to carry out large-scale international activities. As per established practice, Dushanbe hosts a variety of representative forums and conferences.
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The stable political situation, significant socio-economic achievements, developing infrastructure and global recognition have allowed Dushanbe city to host prestigious international and regional events, including the Summit *"Dialogue on Cooperation and Confidence Building Measures in Asia"*, the Second High-Level International Conference "International Decade of Action 'Water for Sustainable Development', 2018-2028", International forums *"Navruz Dushanbe - Heritage of Culture and Tourism"*, "*Dushanbe - City of Opportunities for Children's Development*", as well as the St. Petersburg Culture Days in Dushanbe and other international and regional forums and festivals.

Presently, the capital city of Dushanbe is a member of the International Assembly of Capitals and Cities (IAC), the International Twin Cities Organization, the Boulder-Dushanbe Twin Cities Organization, the World Organization of United Cities and Local Governments.

In 2018, the city of Dushanbe became a member of the World Tourism Cities Federation (WTCF), and according to the surveys of the Information Agency "*Turstat*" of the Russian Federation, Dushanbe city entered the top ten "*Safest Cities*" of the Commonwealth of Independent States, became the "*suitable city for tourism in spring*" and entered the top ten "*Best cities for traveling and night walks*".

On September 28, 2018, by the Decision of the Heads of the Commonwealth of Independent States, the city of Dushanbe was declared *"Cultural Capital of the Commonwealth of Independent States - 2021"*, and by the Decision of the Council of Tourism Ministers of the member countries of the Economic Cooperation Organization on October 3, 2019, the city was declared "*Tourism Capital of the Economic Cooperation Organization in 2020-2021*". In this context, more than 300 different national and international cultural, entertainments, scientific and social events such as conferences and symposiums, forums and meetings, training seminars and round tables, concert programmes and sports competitions were held in 2021.

Dushanbe city is increasingly active in organizing international sports tournaments. The city is developing the relevant sports infrastructure. For example, in recent years alone, the Tennis Palace and the Aquatics Complex, the UFC GYM Sports and Entertainment Complex and the "*Juventus*" Academy, as well as the Olymp Palace Sports Hall have been built with the involvement of domestic and foreign capital.

The city of Dushanbe participated for the first time in 2022 in hosting the Asian Road Cycling Championships.

In the last years a number of international sporting events have been held in the city, including wrestling competitions for the "*Dushanbe Mayor's Cup*", slalom competitions called "*Tajikistan Slalom Open*", as well as the Dushanbe International Half Marathon, Grand Prix wrestling tournament, paragliding, as well as Central Asian international wrestling competitions "*Gushtingiri*."

As a whole, consolidation of actions and effective communications are linked to supporting SDG promotion activities, sustainable interactions within infrastructure support in realizing the city's potential to maximize the impact of the 2030 Agenda for Sustainable Development at the city level.

Photo Credits: **Didor Sadulloev**

CONCLUSION

Efforts to implement the SDGs are underway at the national and local levels of development governance. Potentially, collaborative efforts are aimed at facilitating participatory processes, articulating local priorities, and sharpening the focus of action to achieve the goals by 2030.

On the one hand, the process of formation of the Dushanbe VLR has allowed to assess current efforts and identify aspects that justify opportunities and prospects. On the other hand, this assessment allowed to highlight the range of interrelated and consistent actions for approaching a "smart" and sustainable future, accelerating the implementation of SDGs.

In implementing preventive mechanisms to ensure the sustainability of growth and development, the Executive Public Authorities of the city take into account demographic growth, territorial expansion, and targeted programmatic settings. Moreover, all aspects of public administration are considered through the prism of climate resilience.

Strong points of Dushanbe city are its human capital, scientific and technical resources, concentration of institutional structures and competitive industries, which provides momentum for growth and development, enhances opportunities for increasing the share of high- and medium-technology products, private investments in research and development, innovative ideas, stimulating demand in the domestic market, strengthening the city's place in the country and the region, and ultimately in increasing achievements in the implementation of SDGs.

At present, Tajikistan is at the initial stage of implementation of innovative technologies "*Smart City*". Planning is underway and implementation of pilot projects on introduction of "*Smart City*" technologies has started.

One of the main tasks for the future, for the effective implementation of "*smart*" technologies and solutions, is to ensure the development of information and communication technology infrastructure and urban infrastructure. All this requires measures to modernize telecommunication networks, search for significant capital investments for the reconstruction of urban infrastructures.

The process of creating a "*smart*" city and digitalization of all spheres of its economy, which has begun on the example of Dushanbe city, is extremely useful and important for the whole country.

The modern model of a smart city envisages not only various ways of applying smart technological solutions, but also active involvement of the population, entrepreneurs and civic activists in their promotion and development. It is important at this stage to develop

a practical, more detailed institutional framework for decision-making, financing and management of technology and infrastructure development.

At the same time, it is important to take into account the macroeconomic and general business climate in the country, the growing capacity of the city administration to manage the process of urban infrastructure development and the application of measures to stimulate the growth of the urban economy. It is a complex set of tasks that require time, appropriate public policy measures and material resources to address them.

Dushanbe aspires not only to be an innovative "*smart city*", being the capital and the face of the country, but also to fulfill both the role of an experimental venue and a driving force that will pull the innovative digital development of other cities and regions of the country after it.

At the same time, Dushanbe will be the core of agglomeration development (including by expanding the territory), which should be transformed into a single modern, comfortable, metropolitan center with the expansion of the zone of advanced development beyond its boundaries, with maximum use of the advantages of the capacious capital market and its financial resources. The inequality in infrastructural opportunities between the main territory of the city and the rural territories to be joined should be gradually smoothened and dynamically reduced, which will

require significant investments and active development of the project approach.

It is important to promote the introduction of SDG ideas and targets into the system of analysis, forecasting and programming of city development, based on localization, expansion of the set of local indicators, and improvement of quality criteria of indicators. In doing so, tools will be created to support, including financial support, innovative initiatives by other local actors that can contribute to the implementation of SDGs.

At the same time, efforts to raise awareness among participants in the process of implementation and promotion of "*smart*" technologies and solutions, development of analytical assessments and monitoring systems, support of local initiatives will be important.

Public-private partnership is one of the important tools in addressing the challenges facing the city. In order to implement PPP, which will give impetus to the development and renewal of infrastructure, communication and cooperation systems will be more dynamically developed. The Master Plan will provide a clearer vision of the pace and scale of the city's growth in the future, will take into account current and possible problems and challenges that the city may face in the process of its growth in the future, for example, the growth of population and the number of vehicles, the impact of climate change and natural disasters, the consumption of energy and

other resources by the citizens and the urban economy.

Assistance will be provided in the digitalization of all spheres and divisions of the city economy. In the sphere of human and social capital, a unified digital system will be formed in the field of health care and education. With regard to the urban environment, the *"Active Citizen"* programme will be implemented, aimed at creating a comfortable environment. *"Active Citizen"* programme aimed at creating comfortable living conditions in all districts and settlements of the capital, as well as the application of integrated solutions in the sphere of housing and utility services, construction and future development of the city will be implemented. In the economic sphere, an innovation cluster will be formed to facilitate the creation of startups and companies that will contribute to the technological and innovative equipment of the city and the country as a whole. In the transport sector, integrated systems of urban transport management will be developed, including through a smart system of control over the movement of public transport (electric buses), traffic to prevent traffic jams and improve transport accessibility. In the sphere of digital government activities, the system of public services and multifunctional centers will be developed as a single window of access for citizens to public services and systems of feedback from city inhabitants.

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