UNECE

Smart Sustainable Cities Profile

TBILISI, GEORGIA

UNITED NATIONS

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NOTE

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PREFACE

The Smart Sustainable City Profile of Tbilisi (Tbilisi City Profile) was developed upon the request of the Tbilisi City Hall, funded by the United Nations Development Account (UNDA) 12th tranche project - Smart Sustainable Cities for the 2030 Agenda for Sustainable Development and the New Urban Agenda in the UNECE Region. The project supports the transition of selected beneficiary cities towards smartness and sustainability with a view to accelerating the implementation of SDG 11 and other urban-related Sustainable Development Goals (SDGs).

The Housing and Land Management Unit, Forests, Land and Housing Division of the United Nations Economic Commission for Europe (UNECE) led the development of the Tbilisi City Profile working closely with the City Hall of the Municipality of Tbilisi (Tbilisi City Hall) and the Government of Georgia. The Profile provides the outcomes of the city evaluation against the Key Performance Indicators (KPIs) for Smart Sustainable Cities (SSC) along with action-oriented recommendations for the consideration of the Tbilisi City Hall and the Government of Georgia.

The KPIs for SSC is a public and freely available standard developed by UNECE and the International Telecommunication Union (ITU) in the context of the United for Smart Sustainable Cities (U4SSC) initiative. U4SSC is coordinated by UNECE, ITU and the United Nations Human Settlements Programme (UN-Habitat) and is supported by 14 other United Nations agencies.

* For up-to-date information on cities under KPI evaluation by UNECE, see https://unece.org/housing/sustainable-smart-cities.

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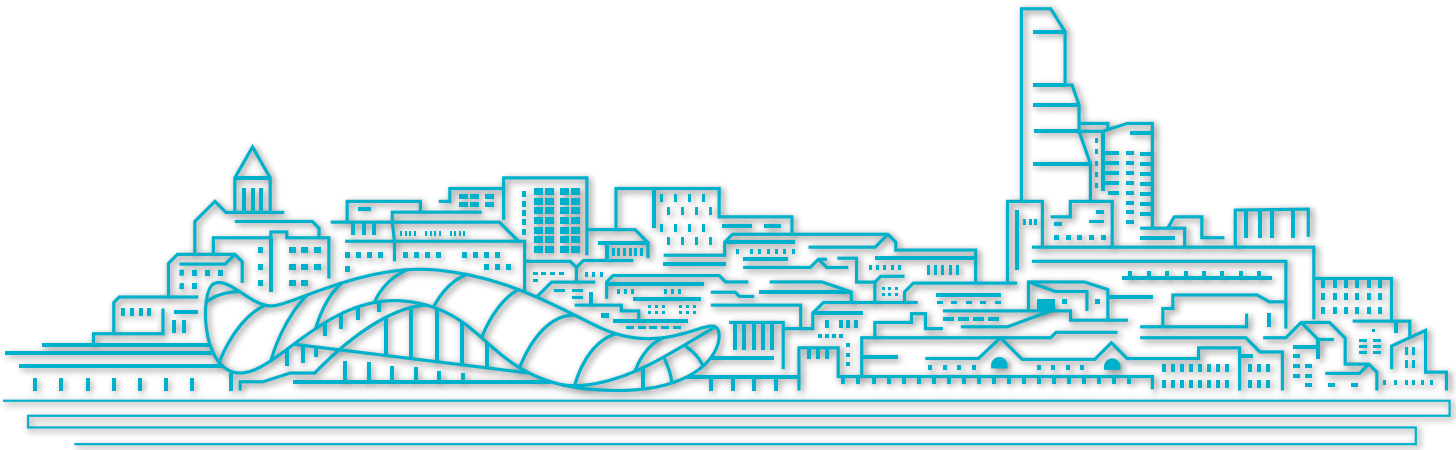

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ACRONYMS AND ABBREVIATIONS

AA	Association Agreement
ADB	Asian Development Bank
CAB	conformity assessment body
CAREC	Central Regional Economic Cooperation Program
CDIA	Cities Development Initiative for Asia
CENN	Caucasus Environmental NGO Network
CNG	compressed natural gas
CO2	carbon dioxide
COVID-19	coronavirus disease 2019
DCFTA	Deep and Comprehensive Free Trade Area
DRP	Development Regulation Plan
DRR	disaster risk reduction
EEN	Enterprise Europe Network
EIA	environmental impact assessment
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EU	European Union
EUR	euro
FDI	foreign direct investment
GAC	Georgian Accreditation Centre
GCAP	Green City Action Plan
GEL	Georgian lari
GDP	gross domestic product
GHG	greenhouse gas
GIZ	German Corporation for International Cooperation
GWP	Georgian Water and Power
ICT	information and communications technology
IPCC	Intergovernmental Panel on Climate Change
IMF	International Monetary Fund
ITDP	Institute for Transportation and Development Policy
ITU	International Telecommunications Union
KPIs	key performance indicators
LEPL	Legal Entity of Public Law
LUMP	Land Use Master Plan

MOEPA	Ministry of Environmental Protection and Agriculture
MOESD	Ministry of Economy and Sustainable Development
MSW	municipal solid waste
NAPR	National Agency of Public Registry
NO2	nitrogen dioxide
NEA	National Environment Agency
OECD	Organisation for Economic Co-Operation and Development
PM	particulate matter
PPP	purchasing power parity
R&D	research and development
RPPI	Residential Property Price Index
SDR	Special Drawing Rights
SDGs	Sustainable Development Goals
SEA	strategic environmental assessment
SMEs	small and medium enterprises
SSC	Smart Sustainable Cities
SUDA	Spatial and Urban Development Agency
SUMP	Sustainable Urban Mobility Plan
TAS	Tbilisi Architecture Service
TDF	Tbilisi Development Fund
TUDA	Transport and Urban Development Agency
USD	United States dollars
USSR	United Soviet Socialist Republic
VAT	value added tax

Units of measurement

°C	degrees centigrade
km	kilometre
km^2	square kilometre
kWh	kilowatt-hour
m^3	cubic metre

Exchange rate as of 2020

1 Georgian lari (GEL) = 3.1097 United States dollar (USD)

All USD equivalent provided in this publication are approximate values based on this exchange rate.

EXECUTIVE SUMMARY

The capital of Georgia, Tbilisi is a metropolitan city with an ambitious vision to become one of the leading smart, sustainable cities in the United Nations Economic Commission for Europe (UNECE) region and beyond. It has registered an impressive progress in implementing the 2030 Agenda for Sustainable Development (2030 Agenda), capitalizing on the growth opportunities generated by the Association Agreement between Georgia and the European Union (EU).

While the lack of data did not allow for evaluating Tbilisi's performance against all the Key Performance Indictors (KPIs) for Smart Sustainable Cities (SSC), the results of the initial assessment show the city scoring:

- Strong performance in the areas of information and communications technology (ICT) infrastructure, water and sanitation and public sector governance
- Moderate to high performance in higher education attainment
- Moderate performance in culture, safety, transport, employment, housing and social inclusion
- Low performance in electricity supply.

The city was able to bounce back from the coronavirus disease 2019 (COVID-19)-induced economic crisis. However, its recovery remains fragile owing to the rising energy prices in the wake of the war in Ukraine. The analysis of the national and city-specific policy and institutional set-up underpinning Tbilisi's urban development suggests that upscaling the city's progress across the social, economic and environmental pillars of sustainable development requires targeted interventions in the following areas:

- Urban mobility
- Housing
- Green and open space
- Water management, blue space and disaster risk management
- Waste management.

Ensuring the successful implementation of these targeted interventions requires improving:

- The overall urban policy and governance framework
- The national quality system underpinning construction and urban infrastructure
- The national and local monitoring and evaluation framework for strategic planning.

The Tbilisi City Profile provides action-oriented recommendations for upscaling efforts under each area. The recommendations were developed in consultation with the local and national authorities and will inform the work of UNECE in support of Tbilisi's efforts to realize its ambitious vision to be a smart sustainable city.

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I. INTRODUCTION

A metropolitan city, Tbilisi is the capital of Georgia and the centre of the country's economic, political, social and cultural life. It is the largest in the country with an ambitious vision to strengthen its status as a major socio-economic hub in the Caucasus region (Salukvadze and Golubchikov, 2016) by transitioning into a smart sustainable city.

This City Profile is meant to help local and national government bodies realize this vision. It was prepared upon the request of the city using the United Nations Economic Commission for Europe (UNECE) Key Performance Indicators (KPIs) for Smart Sustainable Cities (SSC), which were developed jointly with the International Telecommunication Union (ITU) and implemented in over 150 cities across the globe.[1]

The KPIs consist of 112 quantifiable performance measurements for evaluating UNECE cities against a common set of benchmarks of excellence, which track progress toward the achievement of the Sustainable Development Goals (SDGs). The indicators are spread across the economic, social and environmental dimensions of the 2030 Agenda for Sustainable Development (2030 Agenda), with information and communications technology (ICT) integrated as a cross-cutting "means of implementation".[2]

The emphasis is on helping city leaders use ICT for improving the quality of life of all inhabitants and bolstering their cities' overall competitiveness in a manner that is consistent with the 2030 Agenda principle of policy coherence. In so doing, the KPIs provide city leaders with a consistent and standardised method for collecting data and measuring performance as well as a practical reference framework for an integrated, indivisible and balanced treatment of the SDGs.

This City Profile was developed in close consultation with the City Hall of the Municipality of Tbilisi (Tbilisi City Hall) and the central government of Georgia. The preparation of the Profile commenced with an evaluation of the performance of Tbilisi against the KPIs for SSC and a desk review of local and national urban development plans and initiatives. This was followed by face-to-face and online interviews with local and national government officials as well as experts, in late 2021- early 2022, to gain insights into the city's immediate and strategic long-term development challenges and priority needs.

The Tbilisi City Profile is organized in eight chapters. The introduction is followed by an overview of the salient features of Tbilisi, including its topology, urbanization patterns and climate change challenges (Chapter II), and the legal and institutional framework underpinning the city's urban development to set the context for the analysis (Chapter III). The evaluation of Tbilisi's performance against the KPIs for SSC is provided in chapter IV. Chapter V looks into the lingering socio, economic and environmental effects of the COVID-19 pandemic. Chapter VI is a discussion of the main challenges on the city's road to achieving smart and sustainable urbanism. Tbilisi's sources of development funding are highlighted in chapter VII, leading to action-oriented recommendations presented in chapter VIII.

1 The KPIs for SSC were endorsed by the UNECE Committee on Urban Development, Housing and Land Management in 2016 (ECE/HBP/2016/4) to form the basis for the United for Smart Sustainable Cities (U4SSC) initiative. The U4SSC initiative brings together 16 United Nations agencies and supports the evaluation of the performance of cities using the KPIs for SSC and the implementation of smart sustainable city solutions through the development of guidelines, studies, city action plans, and capacity-building events (https://u4ssc.itu.int/). The KPIs are detailed in the Collection Methodology for Key Performance Indicators for Smart Sustainable Cities publication (https://unece.org/housing-and-land-management/publications/collection-methodology-key-performance-indicators-smart).

2 Established under SDG 17 -Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development – the term "means of implementation" is defined in Issue Brief 15 of UN DESA (2014) as "the interdependent mix of financial resources, technology development and transfer, capacity-building, inclusive and equitable globalization and trade, regional integration, as well as the creation of a national enabling environment required to implement the new sustainable development agenda, particularly in developing countries".

II. GENERAL OVERVIEW

Location, topography and hydrography

Tbilisi is located in the South Caucasian region, close to the borders of Armenia and Azerbaijan as well as the Black Sea and the Caspian Sea, making it strategically positioned along major international trade routes.[3] However, this strategic location is not without challenges. Tbilisi lies on the banks of the Mtkvari River,[4] which originates in the Caucasus mountains and constitutes the second largest river in Georgia[5] (see figure 1). It is also surrounded by mountains on all three sides, namely the Saguramo Range on the northern side; the Lori Plain on the east and southeast side; and the Trialeti Range on the southern and western sides.

This complex topography has been setting limits to the urban development of Tbilisi. The city, which covers 502 km² (Tbilisi City Hall, 2018a) and makes up around 70 per cent of the region of Tbilisi,[6] is built on the slopes of mountains so there is limited space for urban sprawling. Moreover, the use of this space is complicated by the city's mountainous terrain[7] as well as the Mtkvari River.

The Mtkvari River crosses Tbilisi from northwest to southeast, thereby dividing the city into two distinct elevation areas and, as such, varying levels of exposure to sea-level rise. Areas located on the right bank of the river (south-eastern parts of the city), at 300 metres above sea level, have higher exposure to sea-level rise than those located on the left bank (north-western parts of the city), which are 550-600 metres above sea level (Abd El Naby, 2018).

The Mtkvari River has also predetermined the city's urban planning. The city stretches in a linear layout along the river, with the asymmetric elevation areas causing the concentration of major urban infrastructure on the left bank, including several large hydroelectric power stations (Adeishvili and others, 2011). Furthermore, the river constitutes a major source of water supply, including irrigation and drinking water. Tbilisi's drinking water also comes from numerous rivers which cross the city and feed a large artificial reservoir, the Tbilisi Sea (see figure 2). The Tbilisi Sea supplies 40 per cent of the city's drinking water and is also used for recreational purposes (Tbilisi City Hall, Resilience Office, 2019).

3 Tbilisi is located along European Union (EU) and Central Asia Regional Economic Cooperation (CAREC) transport networks, linking the region's key economic hubs and connecting Tbilisi to other Eurasian and global markets. For further details, see https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t_en and https://www.carecprogram.org/?page_id=14.

4 The Mtkvari River is the main waterway of the South Caucasian region. It runs 1,515 km in total length, starting in northeastern Turkey. It flows to Georgia, then to Azerbaijan where it enters the Caspian Sea. About 174 km of the river is in Turkey, 435 km in Georgia, and 906 km in Azerbaijan. The Mtkvari River has a total catchment area of 188,000 km2. For further details, see https://www.adb.org/sites/default/files/project-documents/42414/42414-043-sddr-en_2.pdf.

5 The largest river in Georgia is Alazani.

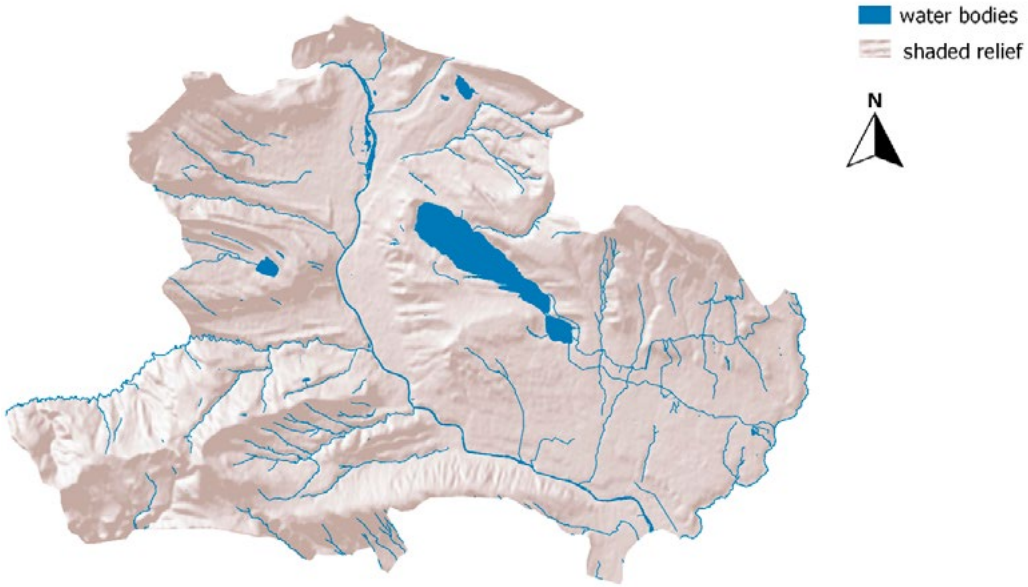
6 The region of Tbilisi's total land surface is 720 km² (https://tbilisi.gov.ge/page/9?lang=en).

7 There are over 1,200 named mountains in Georgia, of which 16 are in Tbilisi. For further details, see the National Atlas of Georgia.

Figure 1 The Mtkvari River Basin

Source: The European Union Water Initiative Plus (https://www.euwipluseast.eu/en/about/pilot-river-bassin/kura).

Figure 2 Tbilisi: hydrography map



Source: UNECE (based on ESRI, 2022).

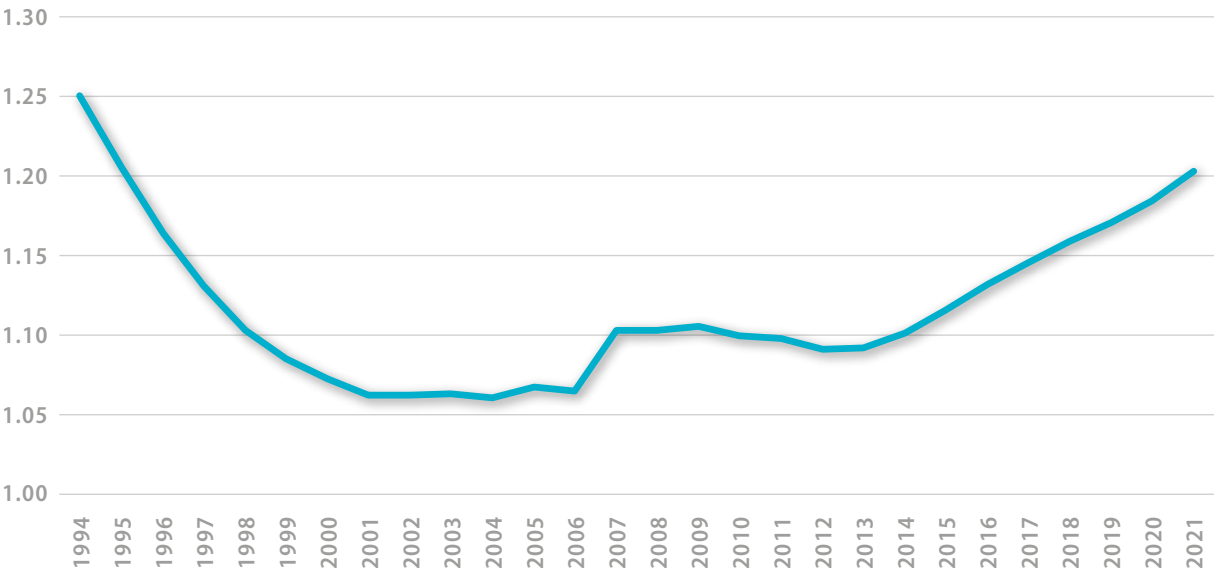
Urbanization trends

The population of Tbilisi increased steadily during the Soviet era (1921-1991). From 160,000 in the 1920s, the city's population grew fivefold by the 1950s (Tbilisi City Hall, Resilience Office, 2019) and reached around 1.25 million in 1989 (NSO, 2022a), rendering Tbilisi the largest in the Caucasus region (Trubetskoy, 2017). The dissolution of the Union of Soviet Socialist Republics (USSR) and the Georgian Civil War (1991-1993) caused Georgians to flee the country which resulted to a significant population decline for Tbilisi.

This declining trend persisted throughout the 1990s (see figure 3) under the weight of political instability and the global financial crisis in 1997. The central Government launched broad reforms to establish a market-based economy and the downtrend stopped. However, the resulting growth opportunities did not bring about an increase in the city's population, with political instability culminating in the Rose Revolution in 2003 and causing population growth to stagnate during the ensuing years.

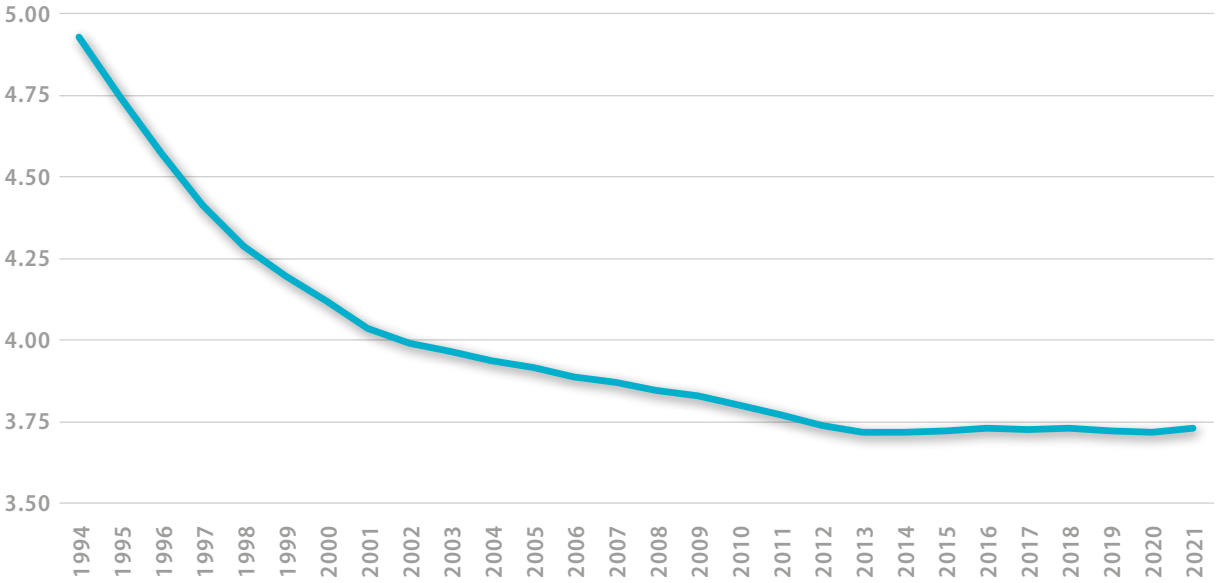
In 2006, the city's sluggish urbanization took a reverse trend, fuelled by the national government's success in combating corruption and consolidating a market-based economy (see chapter IV). More and more, Georgians migrated to the city in search of better jobs bringing the population of Tbilisi to 1.2 million in 2021, representing 97 per cent of the population of the Tbilisi region and 32 per cent of the population of Georgia. In contrast, the population of Georgia has been showing a declining trend (see figure 4), reflecting the importance of Tbilisi as the country's socio, economic and cultural hub.

Figure 3 Tbilisi: population, 1994-2021 (Millions)



Source: NSO, 2022e, Population.

Figure 4 Georgia: population (Millions)



Source: NSO, 2022a.

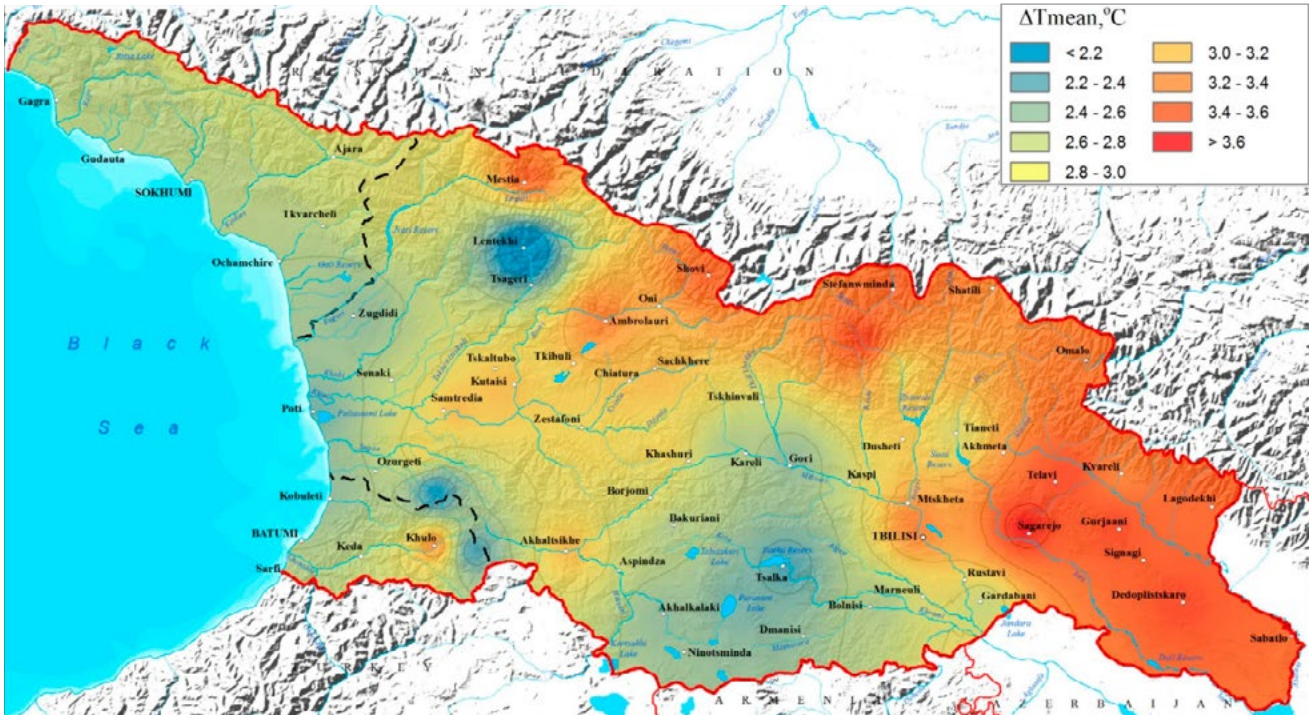
Climate change impacts

The geographic location of Tbilisi as a coastal city makes it vulnerable to floods. Over the past decades, this climate hazard has been compounded by extreme heat and drought. The temperature levels in 1961-1985 compared with the 1986-2010 period shows that the number of days in which the heat index in Tbilisi reached dangerous levels increased by 14 days (MEPA, 2021; WBG and ADB, 2021), with the highest temperature of 40.6 °C recorded in July 2021.[8]

Climate change forecasts by the Ministry of Environmental Protection and Agriculture of Georgia for the period 2041-2070 show average annual temperatures increasing between 1.6°C and 3°C in relation to 1971-2000. In the eastern parts of the country, the average annual temperature is projected to range between 1.8°C and 3°C in 2041-2070 (see figure 5). The loss of green cover, that is, forested areas and parks, has been aggravating the urban heat island effect (Van Loenhut and others, 2021) , with adverse consequences for biodiversity and human health (WBG and ADB, 2021).

The city is also prone to extreme precipitation events. These have been on the rise, with the annual precipitation in Eastern Georgia projected to decrease by 9 per cent on average in 2041-2070 (see figure 6).

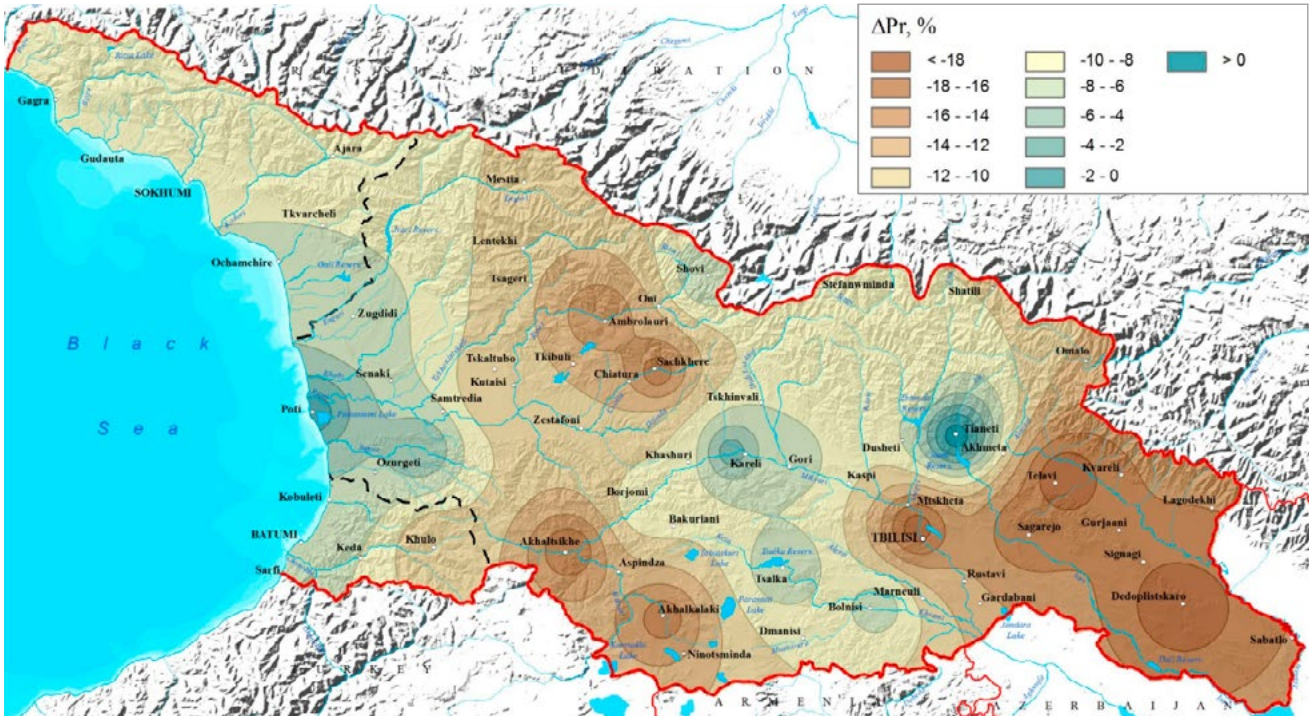
Figure 5 Georgia: climate change scenario considering a change in mean annual air temperature between two 30-year periods (1971–2000 and 2041-2070)



Source: MEPA, 2021.

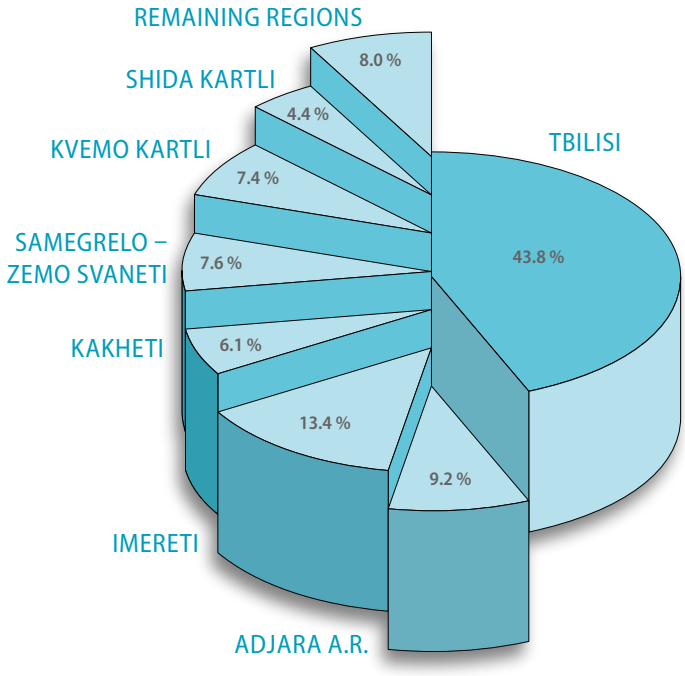
8 For additional information on the climate in Georgia, see https://www.worlddata.info/asia/georgia/climate.php.

Figure 6 Georgia: climate change scenario considering a change in annual precipitation between two 30-year periods (1971–2000 and 2071–2100)



Source: MEPA, 2021.

Figure 7 Georgia: registered enterprises by region, 2021(Percentage)



Source: Todradze and Shavishvili, 2022, table 2.2.

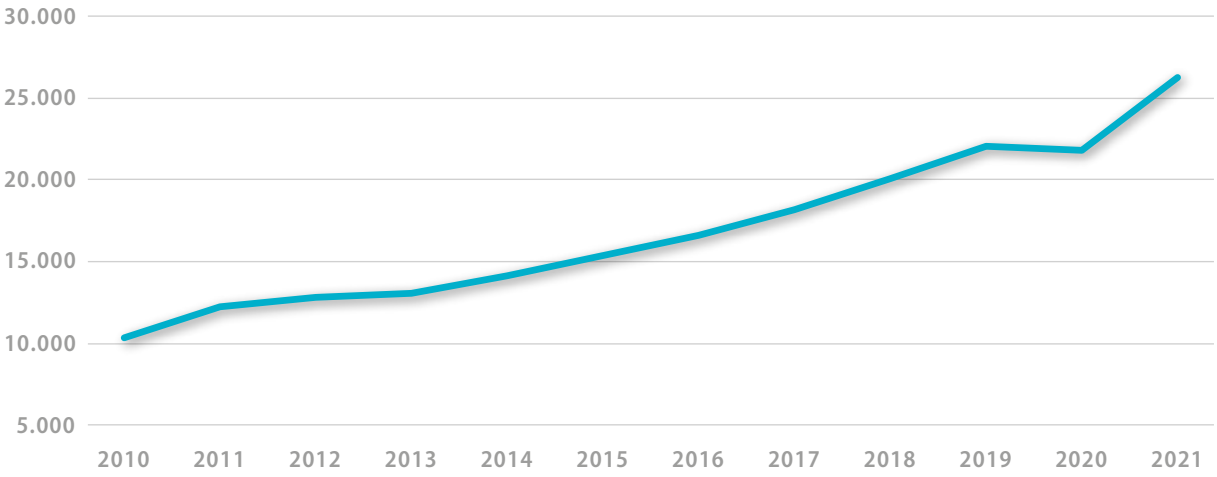
Urban economic profile

A cursory examination of the economic performance indicators of Georgia points to the strategic importance of Tbilisi in driving not only the economic growth of the region but also national growth. The city of Tbilisi was home to around 43.8 per cent of the country's total registered enterprises in 2021 (see figure 7). The Tbilisi region has consistently accounted for the lion's share of the national income, generating over 40 per cent of industrial value added and national gross domestic product (GDP). As shown in figure 8, the region's GDP has been exhibiting an increasing trend since the aftermath of the global financial crisis in 2008. Its share to national GDP since 2010 averaged at 46 per cent until 2021. The region of Tbilisi is also a major contributor to job creation, accounting for the largest share of the country's total employment (31 per cent) in 2019 (NSO, 2022b, Labour Force Indicators by Regions).

The region's impressive performance record cannot be understood in isolation from the Government's reforms which consolidated a conducive environment for urban development (see chapter IV). These reforms generated an influx of foreign direct investment (FDI). According to World Bank data, in 2007, FDI inflows reached a peak of USD 1.89 billion which is equivalent to 18.6 per cent of the country's GDP during the said year, with the region of Tbilisi accounting for the biggest share. FDI inflows were abruptly disrupted by the financial crisis in 2008-2009 but picked up steam in 2010 before reaching an all-time high of USD 1.99 billion in 2017 and 77 per cent of this were invested in Tbilisi (NSO, 2022c). Ensuing years saw a decline again of FDIs. Figure 9 shows FDI in Georgia by regions for the period 2019-2021.

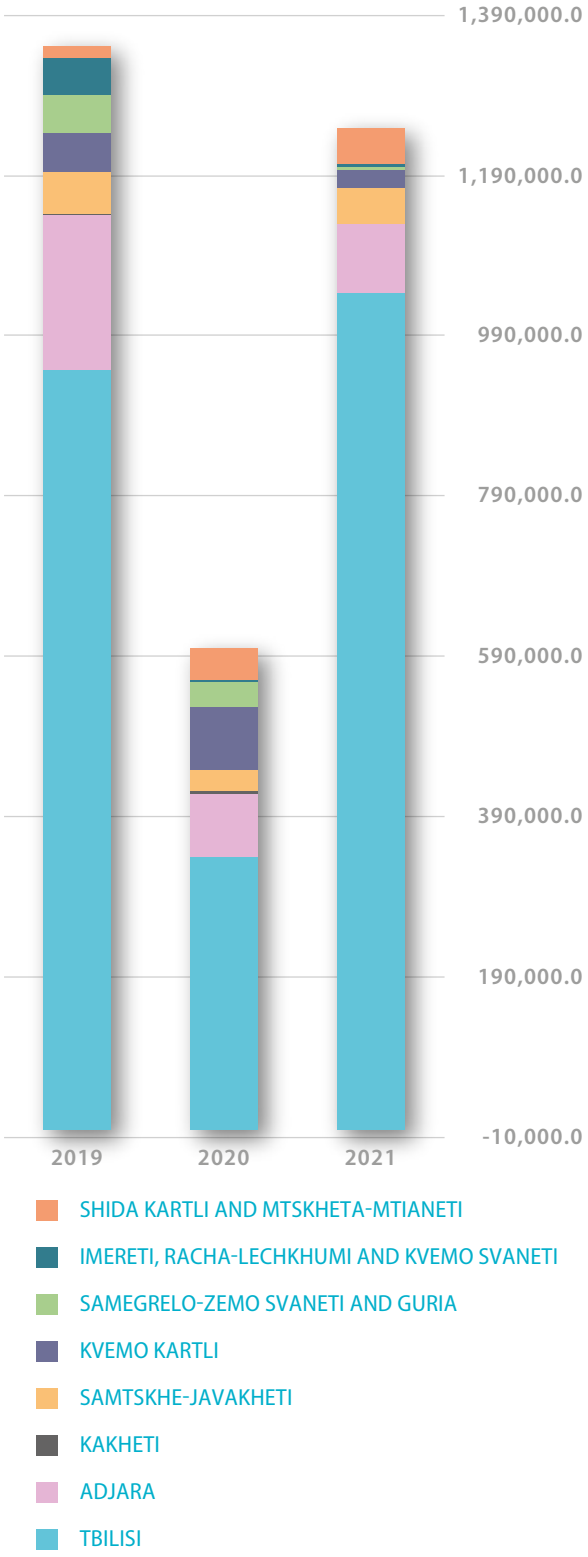
Nonetheless, there remains room for improvement. A key challenge facing Tbilisi city leaders is how best to accelerate job creation, with the region's employment consistently lagging against GDP growth. As shown in figure 10, despite its declining trend over the past decade, unemployment in the region remains high at 16 per cent on the eve of the pandemic. This figure is slightly lower than the national unemployment rate for the same year which was high at around 18 per cent although the trend was declining until 2019.

Figure 8 Tbilisi region: evolution of gross domestic product, 2010-2021 (Millions of Georgian lari)



Source: NSO, 2022e, Gross Domestic Product.

Figure 9 Georgia: breakdown of FDI inflows, by region, 2019-2021 (Thousands of United States dollars)



Source: NSO, 2022c.

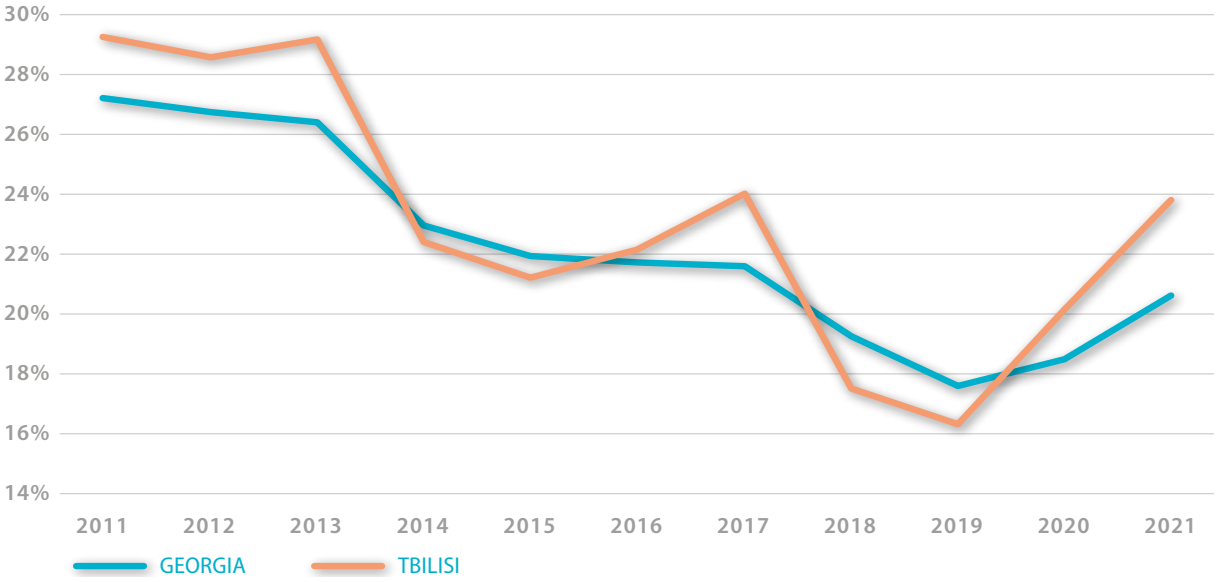
A key requirement for accelerating job creation is to further diversify the city's income sources. As shown in figure 11, the region of Tbilisi remains heavily dependent on wholesale and retail trade for income generation along with real estate and construction. Scaling up the region's structural transformation requires further developing the enterprise sector dominated by small and medium enterprises (SMEs), which mirrors the national trend.[9]

As shown in figures 12 and 13, large enterprises are driving the economic development of Tbilisi region and have been registering consistent increase in their contribution to both value added and job creation over the period 2016-2019. At the same time, contribution of SMEs to value added has also been increasing. However, their contribution to employment has either remained stagnant (medium enterprises) or declined (small enterprises).

Furthermore, the ICT industry has seen its contribution to local GDP drop from 6 per cent in 2010 to 4.2 per cent in 2019, despite the great potential this sector has in view of the Government's regional integration efforts. Similarly, the manufacturing sector contributed to local GDP decline, although by a small percentage of around 1 per cent, from 8.94 per cent to 7.8 per cent over the same period (NSO, 2022e, Gross Domestic Product). Supporting the development of SMEs ranks high on the City Hall's development agenda as they are recognized as an essential element for improving the performance of the local economy. Recent initiatives include the *Tbilisi Business Accelerator Spark* which was launched within the context of donor-funded projects (see box 1).

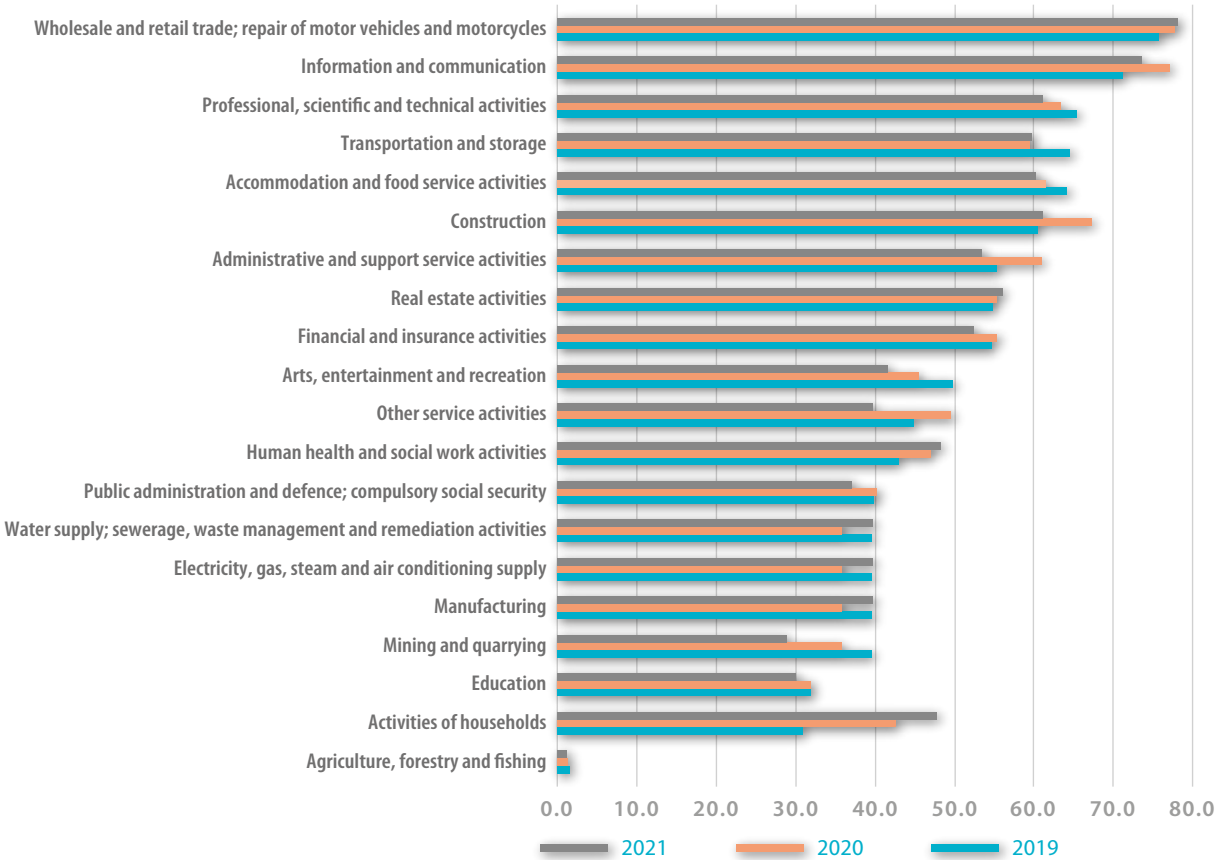
9 SMEs accounted for over 90 per cent of the total number of active enterprises in Georgia. As per the national classification methodology of Georgia, large enterprises are defined as those employing over 249 persons and/or volume of average annual turnover from GEL 60 million. Medium enterprises are defined as employing 50 to 250 persons with an average annual turnover from GEL 12 million to GEL 60 million, while small size enterprises comprise those employing less than 50 persons with average annual turnover – below GEL 12 million (https://www.geostat.ge/en/modules/categories/326/statistical-survey-of-enterprises).

Figure 10 Unemployment rates, Georgia and Tbilisi, 2011-2021 (Percentage)



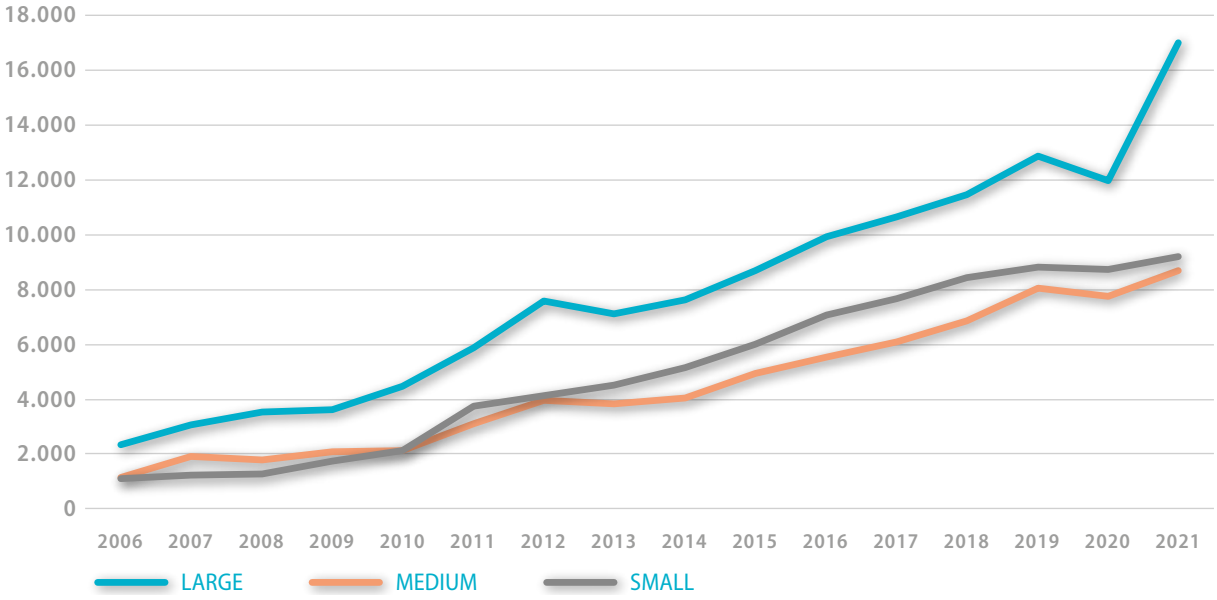
Source: NSO, 2022b.

Figure 11 Tbilisi region: Evolution of economic structure, 2019- 2021 (Share in national GDP at basic prices)



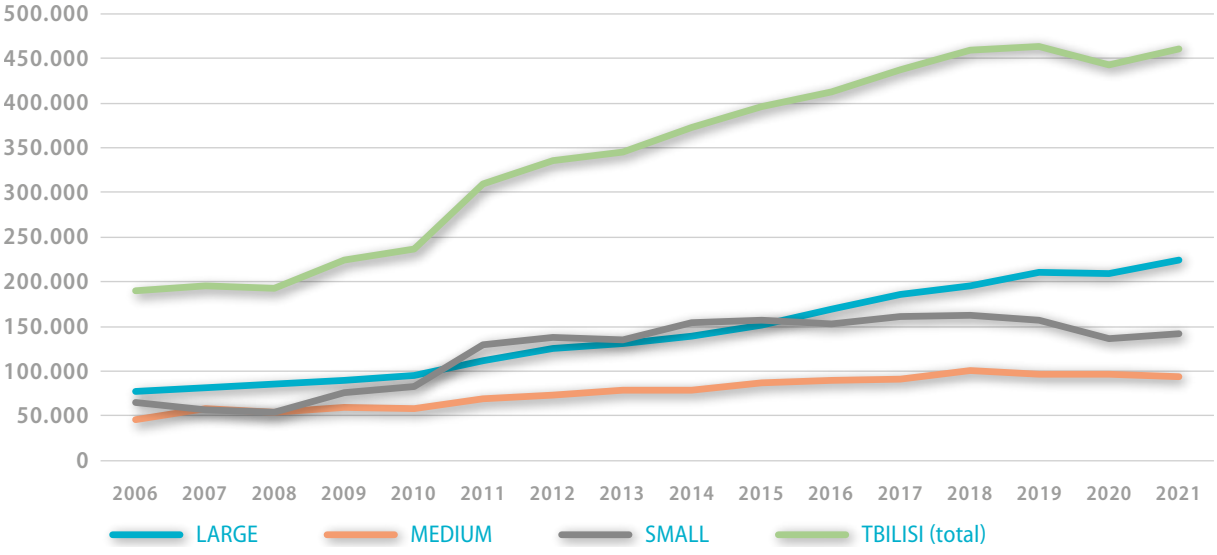
Source: NSO, 2022e, Gross Domestic Product.

Figure 12 Contribution of enterprises to the value added of the region of Tbilisi, by enterprise size, 2006-2021 (Millions of Georgian lari)



Source: NSO, 2022e, Business Sector: Value Added by Regions and Enterprise Size.

Figure 13 Breakdown of contribution of enterprises to the employment of Tbilisi, by enterprise size, 2006-2021 (Number of employed persons)



Source: NSO, 2022e, Business Sector: Number of employed persons by regions and enterprise size.

Box 1 Local initiatives for supporting the development of small and medium-sized enterprises

Tbilisi business accelerator "Spark"

Spark[10] is a joint initiative of Tbilisi City Hall and the European Union launched in 2019 to support entrepreneurs with preparation of business plans and marketing strategies, in addition to furnishing them with office space with common facilities. By June 2022, more than 4,310 businesses benefited from Spark.

One of the most successful initiatives which originated from Spark is a city-wide energy-efficient street lighting upgrade project with a total cost of Georgian lari (GEL) 100 million (USD 34.8 million),[11] which will enable the municipality to reduce cost by 70 per cent. Another large-scale USD 8 million (GEL 23 million)[12] investment project is *Radio City* which involves transforming the former radio factory building into a unique centre for supporting creative industries, SMEs, youth and innovators in Tbilisi.

Impact Hub Tbilisi

The *Impact Hub Tbilisi*[13] is a co-working space where you can meet, collaborate, produce, explore, connect and create. The global Impact Hub network has over 20,000 members in over 100 locations. The Impact Hub Tbilisi implements several programmes, including:

- The Social Impact Award - an idea competition and annual educational programme that promotes the theory and practice of social entrepreneurship.
- ZEG Tbilisi Storytelling Festival - the first storytelling festival that brings together creative professionals from different disciplines.
- Startup Anbani - a six-week programme dedicated to promoting entrepreneurship among children aged 11-13.

Startup Grind Tbilisi

Startup Grind[14] is a global startup community created to inspire, educate, and bring entrepreneurs together. Startup Grind Tbilisi regularly holds events dedicated to various aspects of startup development — from attracting investments to reviews of useful tools and product promotion.

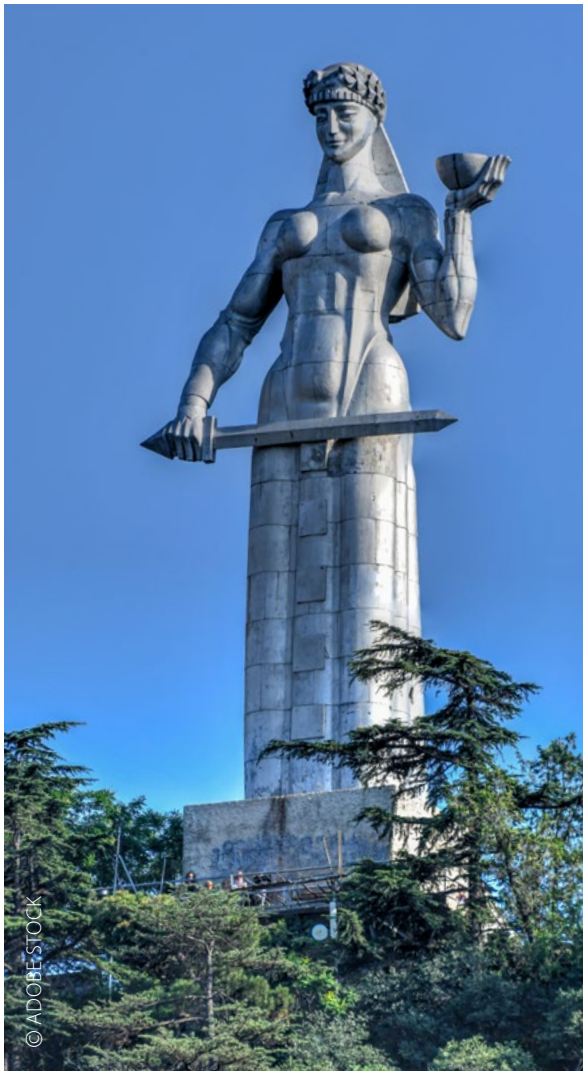
10 https://www.f6s.com/tbilisibusinessacceleratorspark/about.

11 "Industrial city, which is a child company of Adjara Group, plans to invest $8 million during the four years of implementing this project." (https://cbw.ge/business/adjara-group-implements-new-project-radio-city-in-tbilisi)

12 Approximate value in GEL using the average USD/GEL exchange rate of 2.8235 for the third quarter of 2022 (https://www.geostat.ge/en/modules/categories/92/monetary-statistics).

13 https://tbilisi.impacthub.net/.

14 https://www.startupgrind.com/tbilisi/.



In addition, the city could further consolidate its status as one of the major touristic destinations of Europe. Home to diverse cultures, religions and ethnicities,[15] in 2019, the city of Tbilisi accounted for the largest share of the country's total monthly inbound tourist visits (38 per cent) and domestic visits (24 per cent).[16] The city boasts one of the country's most historic sites, Old Tbilisi, which has over 12,000 buildings (Tbilisi City Hall, 2018a) and 1,700 cultural heritage buildings.[17] Tbilisi also has over 1,000 parks, 54 museums, 6 cinemas, 24 theatres and 340 sports fields (Tbilisi City Hall, 2018a). However, the tourism sector (hotels and restaurants) has yet to realize its full potential. While the sector's share in local GDP increased from 2.8 per cent in 2010 to around 6.5 per cent in 2019, its contribution to the local economy could be further improved.[18]

As the city forges ahead in further developing its economy, the challenge is how best to stimulate greater specialization in activities with high value added in a manner that ensures a simultaneous treatment of the three pillars of sustainability. In this respect, FDIs have an important role to play. As shown in figure 14, in 2019, FDI inflows were concentrated in the energy and financial sector (including banks insurance and microfinance).

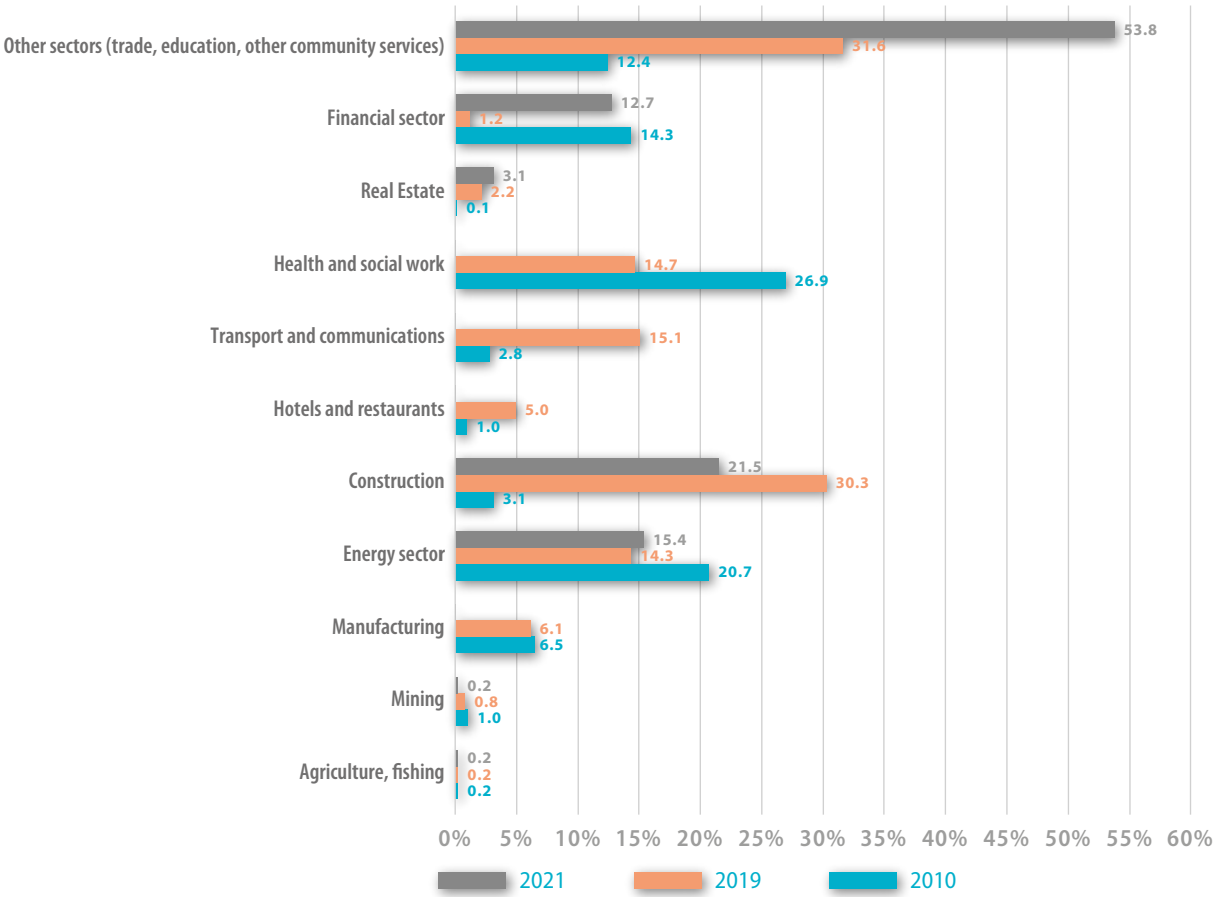
15 For example, neighbourhoods, such as Avlabari, have a high concentration of Armenians and Abanoebisurani is traditionally Muslim and home to Azeri, Kurdish and Persian families.

16 Calculated based on statistics of the National Statistics Office of Georgia (https://www.geostat.ge/en/modules/categories/102/inbound-tourism).

17 Interview of Georgia Today with Levan Jgharkava, head of the Tbilisi Development Fund (https://georgiatoday.ge/new-tbilisi-project-aimed-at-rehabilitating-and-preserving-tbilisis-age-old-charm/#),
For more information of the city's architectural aspect, see https://whc.unesco.org/en/tentativelists/5233/.

18 The 2019 Georgian Tourism in Figures provide a detailed statistical information on the tourism sector of Georgia prior to the COVID-19 pandemic (GNTA, 2019).

Figure 14 Georgia: percentage of FDI inflows, by sector, 2010, 2019 and 2020



Source: NSO, 2022c.

The manufacturing, transport and communications sectors, previously the main FDI recipients, appear to have taken a backseat with their share in total FDI inflows showing a marked decline. The declining share of manufacturing and the modest share of ICT in FDI inflows mean shrinking opportunities for technology transfer, which is essential for stimulating structural transformation into innovative, knowledge-based circular activities with high value added.

Yet another sector registering increased FDI inflows was tourism, and this can be attributed to the rise in FDI inflows to construction. FDI inflows into the construction sector have been recording consistent growth since 2010 and were only disrupted in 2018 when the country was besieged by political instability.[19]

19 An article on the Georgia-Abkhazia conflict forms part of the War Report 2018 of The Geneva Academy (https://www.geneva-academy.ch/joomlatools-files/docman-files/Georgia-Abkhazia%20The%20Predominance%20of%20Irreconcilable%20Positions.pdf).

III. LEGISLATIVE AND INSTITUTIONAL FRAMEWORK FOR URBAN DEVELOPMENT

Tbilisi is a self-governing city with defined boundaries, symbols (e.g. flag and coat of arms) and assets, including financial and natural resources. The city is also responsible for the collection of property taxes, fees, and charges, including for the rent, lease and sale of public real estate. The only exception is the collection of income tax which falls under the responsibility of the central government. The following is a brief summary of the city's main responsibilities:

1. Spatial and urban planning – development and implementation of spatial and urban planning documents;
2. General public services – municipal administration, management of municipal properties, issuance of building permits, and military recruitment;
3. Public order and safety – fire safety and rescue assistance;
4. Economic and transport – local motorways, traffic regulation on local roads, and local public transport;
5. Tourism – developing new tourist routes and promoting the city as a tourist destination;
6. Urban rehabilitation – through the Tbilisi Development Fund, which is responsible for the rehabilitation of historical buildings, public spaces (including squares, and plazas) as well as the rehabilitation and modernization of museums and recreational areas;
7. Economic life – outdoor advertising and street trading, exhibitions, markets and fairs, and management of local natural resources;
8. Environmental protection – municipal waste management, street cleaning, public parks and public areas;
9. Housing and community amenities – issuance of housing permits as well as construction permits for non–residential buildings and basic utility infrastructure (see annex 1), local water supply, and cemeteries;
10. Health – hygiene and sanitary inspections as well as public health care, including prevention of epidemics;
11. Recreation and culture – libraries, cinemas, museums, theatres, sports facilities, preservation and development of local heritage, and local cultural monuments;
12. Education – preschool education;
13. Social protection – registration and provision of shelter for the homeless, infrastructure for disabled persons, and welfare support for the internally displaced persons.

Annex 1 presents the key legislation supporting spatial planning and urban development in Georgia.

The city government comprises a representative body (the City Assembly) and an executive arm (Tbilisi City Hall), both of which are directly elected for a four-year term. The City Hall is headed by the mayor, who is assisted by a deputy mayor and three vice mayors and is responsible for overseeing the city's ten administrative districts (Georgian: *raioni*). Each district is led by a Head of District, appointed by the mayor of Tbilisi with the approval of the City Assembly (see figure 15).

Figure 15 Administrative districts of Tbilisi

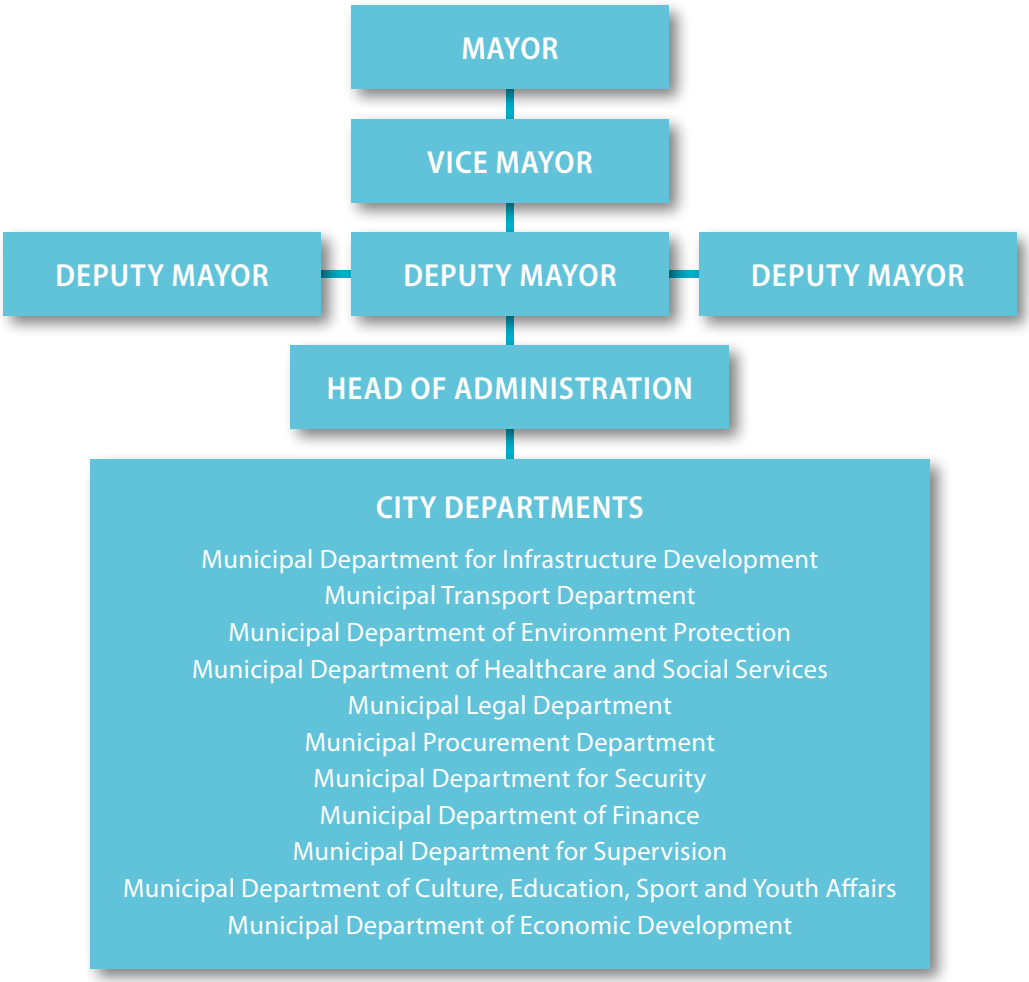
Source: Tbilisi City Hall, 2018a, p. 12.

The City Hall is organized into sector-specific departments that function like ministries. As shown in figure 16, these include the departments for Economic Development; Environmental Protection; Infrastructure Development; Transport; Healthcare and Social Services; Legal; Procurement; Security; Finance; Supervision; and Culture, Education, Sport and Youth Affairs.

Working under the City Hall are the Transport and Urban Development Agency (TUDA), the Tbilisi Architecture Service (TAS) and the Tbilisi Development Fund (TDF), which are responsible for urban development, transport, and construction with water supply and wastewater management outsourced to the private company Georgian Water and Power (GWP). Solid and construction waste management falls under the responsibility of Tbilservice Group Ltd, founded by the Tbilisi City Hall in 2007 with 100 per cent share capital. The issuance of building permits falls under the competency of the Legal Entity of Public Law (LEPL) Tbilisi Property Management Agency, working closely with TAS, which ensures compliance with national regulatory requirements.

In addition, the city of Tbilisi has spearheaded a metropolitan governance initiative with the neighbouring municipalities of Mtskheta (in Mtskheta-Mtianeti province) as well as Rustavi and Gardabani (in Kvemo Kartli region) which aim at fostering inter-municipal co-operation in the areas of water supply, sewerage and solid waste management.

Figure 16 Organizational diagram of Tbilisi City Hall, 2022



Source: Prepared by UNECE based on information from the Tbilisi City Hall website (https://tbilisi.gov.ge/?lang=en). Accessed on 30 May 2022.

City level development plans

Tbilisi has an ambitious urban development agenda best expressed in the following city planning documents:

- Tbilisi Land Use Master Plan (2019) – defines legal zones and basic parameters for land use and specifies spatial-territorial requirements for environment protection and heritage preservation, as well as economic, transport and infrastructural development necessities and directions for the whole city.
- Green City Action Plan 2017-2030 – identifies priority measures for reducing CO_2 emissions by around 450,000 tons per year and generating water savings of around 55 million m^3 per year.
- Tbilisi Resilience Strategy for 2030 (2019 edition) – aims at supporting the development of "a resilient and vibrant city, where residents are protected and safe, where there is access to opportunity and healthy natural environments and where we are empowered to plan ahead, ready respond to any challenge".
- Morgenstadt: City Insights City Lap Tbilisi (2016) – provides a roadmap for sustainable urban development.

Table 1 provides an overview of these documents through the lenses of the city's main urban challenges and priorities highlighted by City Hall officials, namely: sustainable urban mobility, creation of new green and recreational spaces and preservation of the cultural heritage through housing renovations in the inner city.

Table 1 Overview of local plans, programmes and strategies

Areas	Plans, programmes, and strategies	Objectives	Policy measures
Policy framework and governance	Morgenstadt: City Insights City Lap Tbilisi (2016)	• Implementation of cross-sectoral approaches to break the silo structures within the City Hall • Strengthening civil society participation and engagement • Creating a learning organization within the City Hall • Political continuity and long-term planning	• Urban development advisory board • Participatory budgeting • Integrated Information Management for City Hall • Open Data Strategy
	Green City Action Plan (2017-2030)	*The plan does not feature governance-specific objectives.*	• Sustainable urban planning system • Computer-based system for land use in the city
	Tbilisi Land Use Master Plan (2019)	Restrict the extensive territorial growth and direct the development towards the developed inner areas	• Improve regulations to ensure planned construction • Resolving land-use conflicts

Table 1 Overview of local plans, programmes and strategies (continued)

Areas	Plans, programmes, and strategies	Objectives	Policy measures
Urban mobility 	Green City Action Plan (2017)	Promote the use of public transport	• Creation of sustainable polycentric clusters to alleviate traffic congestion • Development of Sustainable Urban Mobility Plan • Bus fleet renewal (low/zero emission buses) • Bus network restructuring • Surface transport network feasibility studies • Development of smart traffic management systems • Regulation of taxis • Awareness-raising campaigns
	Tbilisi Land Use Master Plan (2019)	Ensure easy and fast access to all amenities of the city for each resident of Tbilisi	• Reduce the role of motorized transport • Improve public transport • Reduce air pollution • Use of green energy sources for public transport • City of short distances • Connect public transport nodes to polycentric areas • Consider mixed functional areas to reduce traffic flows • Promote walking and cycling • Develop a parking management system to save space and create an attractive urban look • Development of pedestrian areas • Analysis of airport volumes • Assessment of river crossing areas • Assess the potential of underground urbanism • Consider the needs of people with disabilities • Remove railway barrier in central part of the city • Provide connections between city sub-centres • Coordination between transport structures and heritage sites • Development of a system of main pedestrian areas

Table 1 Overview of local plans, programmes and strategies (continued)

Areas	Plans, programmes, and strategies	Objectives	Policy measures
Urban mobility (continued) 	Tbilisi Resilience Strategy for 2030 (2019)	• Develop a city that is thriving, connected and accessible • Develop active and inclusive transport systems	• Sustainable Urban Mobility Plan • Kvari River Tourism Transport Study • Develop the "Street Manual" of Tbilisi for cycling+ walking+ public transport • A resilient and user-friendly bus network • Intelligent Transport Management Systems
	Morgenstadt: City Insights City Lap Tbilisi (2016)	• Improve the mobility situation in Tbilisi by installing an intelligent traffic management system across the whole city (including non-technical aspects) and reintroducing mandatory technical car inspection • Identify possibilities to avoid traffic and, therefore, congestion and establish measures to reduce traffic • Create alternatives to cars to reduce congestion and establish a sustainable mobility system in Tbilisi • Acknowledge the role of urban logistics in the transport system, analyze the current situation and develop measures to ease the pressure on the urban transport system	• Creating an intermodal transport hub as a "real-life laboratory" to test integrated solutions will promote the use of public transportation in Tbilisi. • In combination with a real-time customer satisfaction survey, the providers implement an analysis tool which improves flexibility and creates transparency about the mobility system • Pilot bike lane • Pedestrian Master Plan

Table 1 Overview of local plans, programmes and strategies (continued)

Areas	Plans, programmes, and strategies	Objectives	Policy measures
Housing 	Tbilisi Land Use Master Plan (2019)	*The plan does not feature housing-specific objectives.*	• Reduction of CO emissions in the construction sector • Prioritize affordable housing • Protection of monuments
	Green City Action Plan (2017)	• Introduce building standards for energy efficiency	• National energy efficiency action plan for the buildings sector • Minimum technical requirements for buildings • Rehabilitation of municipal buildings • Promote the use of renewable energy in buildings • Municipal energy management system
	Tbilisi Resilience Strategy for 2030 (2019)	• Provide safe housing in safe locations for all residents	• A long-term strategy for refurbishing all public buildings in Tbilisi will help implement the Sustainable Energy Action Plan of Tbilisi, raise awareness and control energy consumption cost, and can be used as a capacity-building measure • Showcase a residential block to demonstrate sustainable solutions • Development of a knowledge-based economy of structural engineering and construction in Tbilisi
	Morgenstadt: City Insights City Lap Tbilisi (2016)	• Address the scarcity of construction know-how in a coordinated manner with international collaboration and a training centre in Tbilisi • Implement comprehensive energy efficiency strategy for all new and existing public buildings and go beyond energy to other sustainability aspects	• Gas derived from organic waste at the landfill to be utilized to replace fossil fuels • Improve logistics of waste collection to reduce costs and relieve road traffic

Table 1 Overview of local plans, programmes and strategies (continued)

Areas	Plans, programmes, and strategies	Objectives	Policy measures
Waste 	Green City Action Plan (2017-2030)	• Improve recycling of solid waste through technology investments and awareness campaigns	• Strengthening regulatory and planning capacity • Construction of new waste treatment facility • Modernisation of waste collection equipment • Awareness-raising campaign for the public • Closure and remediation of illegal dumpsites • Utilization of landfill gas for electricity generation
	Waste Management Plan of Tbilisi (2019-2023)	• Improve municipal waste management • Ensure compliance with national regulatory requirements pertaining to health, safety and environmental protection	• Improving waste collection, transportation, recovery and disposal.
	Waste Prevention and Recycling Strategy (2021)	• Establish a proactive approach to solid waste prevention	• Measures for waste prevention and recycling under different scenarios based on a sustainability assessment that takes into account the social, economic and environmental impacts of waste prevention and recycling under different scenarios.
	Morgenstadt: City Insights City Lap Tbilisi (2016)	• Implement comprehensive energy efficiency strategy for all new and existing public buildings and go beyond energy to other sustainability aspects	• Utilizing landfill gas • Recycling of municipal solod waste

Table 1 Overview of local plans, programmes and strategies (continued)

Areas	Plans, programmes, and strategies	Objectives	Policy measures
Green and open spaces 	Green City Action Plan (2017)	• Promote mixed-use developments to improve land use and resilience to flooding in the city	• Development of new green spaces in the urban area of the city • Biodiversity strategy and green corridors to promote biodiversity • Field investigation on landslide prevention and flood risk mitigation
	Tbilisi Land Use Master Plan (2019)	• Ensure equitable protection of the city's anthropogenic and natural environment, improvement of the quality of the environment and the improvement of the city's recreational system	• Activation and protection of ventilation corridors • Scheduling new developments in safe areas • Emphasize the river as a ventilation corridor • Landslide protection • Determining the boundary between the built and unbuilt areas • Avoid urban sprawling • Promote brownfield regeneration • Improve natural ventilation • Avoid the development of new territories • Improve citizens' access to forests and natural green resources around the city • Prioritize walking and cycling • Create a connected green network • Improve accessibility of green areas
	Tbilisi Resilience Strategy for 2030 (2019)	• Develop the approach of Tbilisi to climate change adaptation • Protect healthy natural environments	• Elaborate a climate change strategy for Tbilisi • Action plan for public environmental awareness • Infrastructure climate change adaptation commitment • Rehabilitating Tbilisi's parks for resilience • Restoring Tbilisi's forests • Inventory for small-scale urban parks and biodiversity assessment • Cleaning up sewerage and floodwater networks to prevent Mtkvari River pollution • Lisi Lake and Turtle Lake rehabilitation for recreational area • Improving air quality monitoring and management • Establishing an air quality information portal to inform decision-making

Table 1 Overview of local plans, programmes and strategies (continued)

Areas	Plans, programmes, and strategies	Objectives	Policy measures
Urban water management and blue spaces	Tbilisi Land Use Master Plan	*The plan does not feature a specific urban management objective.*	• Reduce water pollution • Revitalization of the river and its shores • Revitalization of small rivers
	Green City Action Plan (2017)	• Improve city resilience to flood risks and other climate related pressures • Introducing regulations and standards in industry for use of "grey" water • Water savings of around 55 million m3 per year	• Modernisation of central wastewater treatment plant • Extension of the existing sewerage system • Repair and maintenance of water distribution system • Reduction of water consumption by consumers • Wastewater discharge limits for industrial and commercial premises

Source: Tbilisi City Hall.

Note: The table does not include the upcoming Sustainable Urban Mobility Plan (SUMP), which is due for publication in 2022.

National level development plans and governance structure

While the local government of Tbilisi is responsible for managing city-wide spatial planning, resources and urban development, key policies with direct bearing on the development prospects of the city are set out and implemented at the national level. These policies are anchored in broad reforms, aimed at achieving inclusive sustained growth that addresses the three pillars of sustainability (economic, social and environmental).

National reforms entered a new phase in 2014 with the signing of the Association Agreement between the Government of Georgia and EU.[20] The Agreement provides for completing the integration of Georgia into the EU regional bloc[21] within the context of the Deep and Comprehensive Free Trade Area (DCFTA). In addition to the elimination of residual tariffs, DCFTA stipulates the approximation of the national laws of Georgia to the EU Acquis Communautaire, thereby providing a new impetus for scaling up national legislative and institutional reforms across all sectors and policy areas.[22] Annex 2 presents a summary of urban-related policies and laws which fall under the responsibility of the central Government.

- Country-wide spatial planning and urban development (other than those falling under local authorities) falls under the responsibility of the newly established Legal Entity of Public Law (LEPL) Spatial and Urban Development Agency (SUDA), created in June 2022 pursuant to recent amendments to the Law of Georgia "Code of Spatial Planning, Architectural and Construction Activities of Georgia". The Agency took over spatial planning from the Ministry of Regional Development and Infrastructure, including defining the Special Regulation Zones for the Government's consideration, issuing Development Regulation Plans (DRPs) and guiding local governments in issuing construction permits according to the DRPs. The creation of SUDA marks a new chapter in the country's reforms (see annex 1). With better funding opportunities and a strengthened capacity (from 13 to 44 persons), SUDA is focused on establishing a proactive approach to addressing current and future challenges to a more balanced and sustainable spatial planning and urban development, particularly those caused by climate change, population growth and rapid urbanization. Officials highlighted fostering synergies between spatial planning and urban development as a key element in such an approach as well as scaling up collaboration with regional and local level governments.

- Land Administration falls under the responsibility of LEPL National Agency of Public Registry (NAPR)[23] under the Ministry of Justice. Since August 2016, the Agency has been implementing a comprehensive land registration reform to improve tenure security, which saw the registration of over 1.3 million land parcels by the end of 2021. The Agency maintains an electronic cadastral system, which comprises: an online land register "TRACEDOC" which uses Blockchain technology; electronic cadastral surveying for producing interactive maps with 360-degree street images; and a cadastre of laws on land ownership. The Agency is focused on covering the territory of Georgia and digitalizing all cadastral surveys.[24]

20 Georgia signed the Association Agreement with the European Union (EU), the European Energy Community and their Member States in 2014. The Association Agreement was provisionally implemented in September 2014 and has entered into full force since 1 July 2016 (https://police.ge/en/ministry/structure-and-offices/international-relations-department/euro-atlantic-integration/european-union/asocireba; https://www.europa-nu.nl/id/vk5efej2ehzr/nieuws/eu_georgia_association_agreement_fully).

21 Georgia benefited from the Generalized Scheme of Preference Plus (GSP+) of the European Union until 31 December 2016 (https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/georgia_en).

22 For more information on DCFTA, see https://dcfta.gov.ge/en.

23 National Agency of Public Registry (https://www.napr.gov.ge/).

24 More information in the 2021 annual report of NAPR (http://napr.gov.ge/about_the_agency).

- Environmental policy falls under the responsibility of the Ministry of Environmental Protection and Agriculture (MOEPA) which undertakes ex-ante and ex-post climate change impact assessments and coordinates the preparation and implementation of climate mitigation and adaptation strategies and action plans. In 2022, MOEPA was in the process of implementing its climate change strategy – *Georgia's 2030 Climate Change Strategy and Action Plan for 2021-2023* – which aims at reducing greenhouse gas (GHG) emissions to at least 35 per cent below 1990 levels by 2030.[25] MOEPA, the Ministry responsible for issuing Environmental Impact Permits, launched an online portal in May 2022 for publishing EIAs as well as strategic environmental assessment (SEA) applications and decisions.[26] The launching of this portal, which is managed by LEPL National Environment Agency (NEA) under MOEPA, comes as part of a broader effort to bolster transparency and strengthen public-private consultations and is complemented by efforts to further improve the environmental and hydrometeorological monitoring system of Georgia. NEA is focused on developing a state-of-the-art system for collecting and disseminating environmental monitoring data and has recently launched an online air quality monitoring system to track progress in reducing air pollution.[27]

- Economic development, trade, transport, investment and energy fall under the responsibility of the Ministry of Economy and Sustainable Development (MOESD). The Ministry launched a 10-year development plan in 2021, "Georgia's Economic Development Long-term Vision – Economy 2030", which covers 12 major areas, ranging from small business empowerment, investment attraction, transport and logistics to specific development policies and quantitative indicators in each key area (Government of Georgia, 2021). MOESD also provides a range of enterprise support services to enable the structural transformation of the economy toward increased specialization in knowledge-based activities with high value added (see annex 3). MOESD is also focused on ensuring that at least 35 per cent of the country' total energy needs are supplied from renewable sources by 2030, as per the National Renewable Energy Action Plan (MOESD, 2021).

- Ensuring the quality of transport, basic utility services and buildings (residential and non-residential) falls within the competence of MOESD. The Ministry oversees the national system of technical regulations, standardization and conformity assessment, which provide the basis for not only ensuring the quality, safety, energy efficiency and climate resilience of urban infrastructure and buildings but also for unleashing innovation. This system has been undergoing extensive reforms as part of the Government's efforts to approximate national legislation to the EU *Acquis*. Below is a brief overview of reform achievements to date:

25 For strategic documents on the 2030 Climate Change Strategy of Georgia, see https://mepa.gov.ge/En/PublicInformation/32027.

26 he National Environment Agency is a legal entity of public law within the system of the Ministry of Environmental Protection and Agriculture of Georgia. For information on the EIA/SEA applications, see https://nea.gov.ge/En/GZSH-Applications.

27 The Air Quality Portal is available at https://www.air.gov.ge/en/.

- The technical regulations of Georgia are developed in line with international best practices.[28] As of 2022, Georgia has harmonised (i.e., transposed into national laws) over 50 per cent of the EU Regulations and Directives of direct relevance to urban development (see annex 4) and has adopted most of the European harmonised standards.[29] Together, the EU Directives and the European harmonised standards provide the legislative basis for ensuring consumer safety and environmental conservation across all sectors, including in the fields of construction and urban infrastructure (transport and utility services).[30]

- Conformity assessment (which relates to determining whether products, ICT management systems and services fulfil the safety, quality and environmental conservation requirements and characteristics described in standards and technical specifications referenced in technical regulations)[31] falls under the responsibility of conformity assessment bodies (CABs). These bodies comprise testing laboratories, product/service certification bodies and inspection bodies are accredited by LEPL Georgian Accreditation Centre (GAC)[32] and operate under MOESD. It is important to note that Georgia recognizes conformity assessment results and certificates accompanying imported construction material issued by accredited CABs in the EU and Member countries of the Organisation for Economic Co-Operation and Development.

- Market surveillance of industrial and construction products as well as pressure equipment placed on the market falls under the responsibility of LEPL Market Surveillance Agency, which operates under MOESD.

- Construction permits and market surveillance of buildings and structures intended for hosting nuclear power structures/stations, that is, Class V buildings and structures as explained in annex 1, fall under the responsibility of LEPL Technical and Construction Supervision Agency under MOESD.

- Metrology and standardisation fall under the responsibility of the LEPL Georgian National Agency for Standards and Metrology (GEOSTM), which undertakes applied and legal metrology as well as the adoption and registration of the standards in accordance with the Georgian law.

28 Pursuant to the Agreement on Technical Barriers to Trade (TBT), technical regulations set out "product characteristics or their related processes and production methods, including the applicable administrative provisions, compliance with which is mandatory. These may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method". According to international best practices, only the essential regulatory requirements are spelled out, and these are limited to ensuring compliance with safety, health and environmental conservation concerns, and are provided in the text of the technical regulations, with standards referenced by number, title, scope, date or any combination of these. See annex 3 of the World Trade Organization Agreement on Technical Barriers to Trade, also referred to as the "Code of Good Practice" (https://www.wto.org/english/docs_e/legal_e/17-tbt.pdf).

29 A standard refers to a technical specification approved by a recognized national, regional or international standardization body and made available to the public for repeated or continuous application. Conformity with standards, which are developed by public or private entities, is voluntary. When a standard is referenced in legislation (as a basis for technical regulation), it becomes mandatory. For further details, see https://www.iso.org/sites/ConsumersStandards/1_standards.html.

30 A harmonized standard is a European standard created by a recognized European Standards Organization following a request from the European Commission (https://single-market-economy.ec.europa.eu/single-market/european-standards/harmonised-standards_en).

31 For a detailed description of conformity assessments, see https://www.iec.ch/conformity-assessment/what-conformity-assessment.

32 GAC is a signatory to the European Cooperation for Accreditation Multilateral Recognition Arrangement and will be joining the International Laboratory Accreditation Cooperation Mutual Recognition Agreement (ILAC MRA) in the coming months. For information on how ILAC MRA works, see https://ilac.org/ilac-mra-and-signatories/. For requirements for accreditation bodies, see https://www.iso.org/standard/67198.html.

- Health care, labour, social security and the management of internally displaced persons (IDPs) fall under the responsibility of the Ministry of Internally Displaced Persons from the Occupied Territories, Labour, Health and Social Affairs.

- Trade facilitation, a critical element for ensuring the efficient flow of imports and reducing trade costs, falls under the responsibility of the Revenue Service which implemented over 93 per cent of the provisions of the World Trade Organization Agreement on Trade Facilitation before the agreement's entry into force.[33]

- Public-private partnerships are supported by the LEPL Public-Private Partnership Agency (https://ppp.gov.ge/en) established in February 2019 pursuant to the Law on Public Partnerships[34] and is accountable to the Prime Minister of Georgia.

33 The Agreement on Trade Facilitation entered into force on 22 February 2017 following its ratification by two-thirds of the World Trade Organization membership. The UNECE Study on Regulatory and Procedural Barriers to Trade in Georgia details the trade facilitation measures of Georgia (https://www.unece.org/fileadmin/DAM/trade/Publications/ECE_TRADE_443E_Georgia.pdf).

34 The law was adopted on 4 May 2018 (https://ppp.gov.ge/app/uploads/2020/04/ppp-law-ENG.pdf).

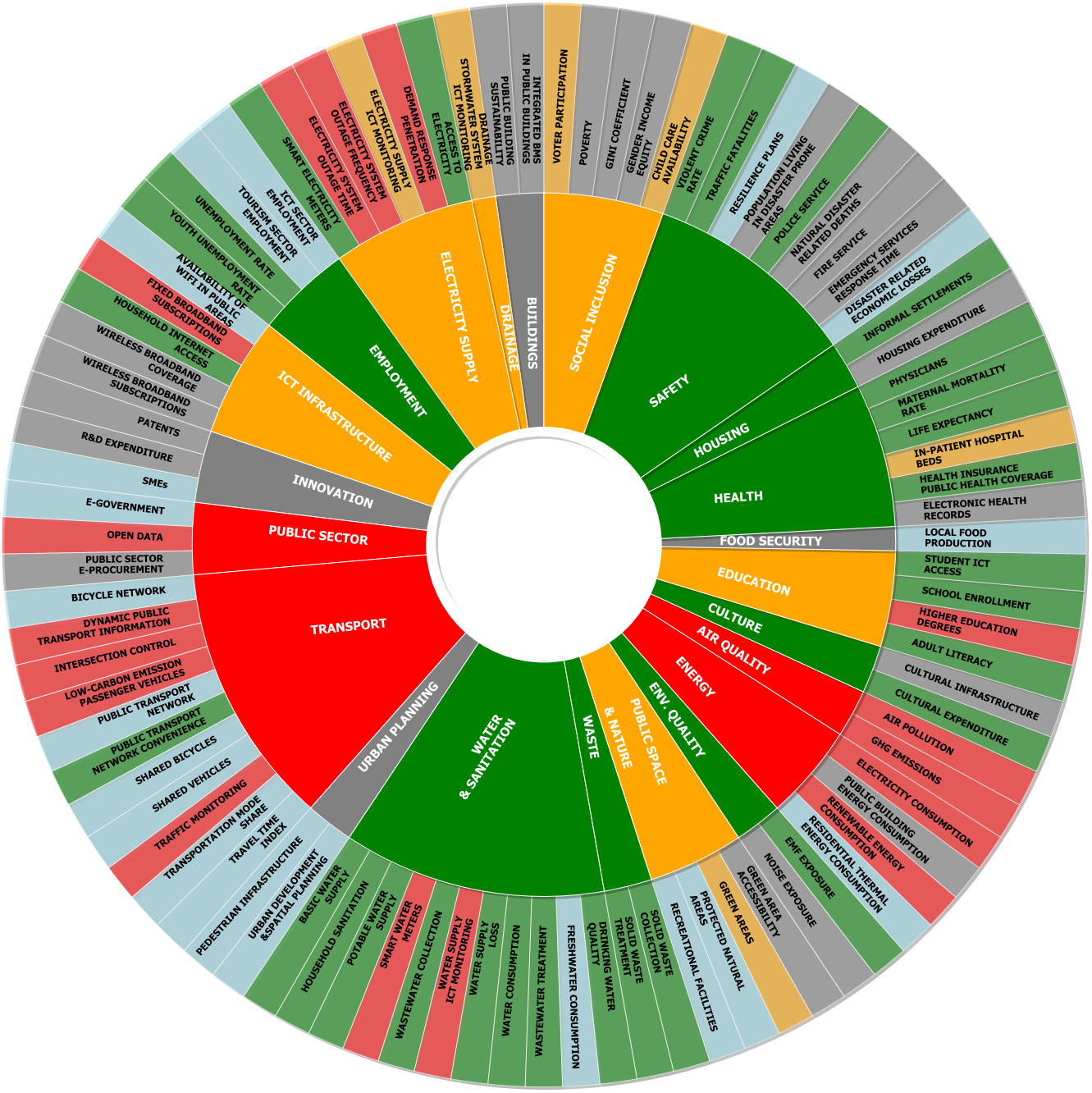
IV. KPI EVALUATION RESULTS

The city of Tbilisi reported data for 47 of 112 indicators (29 of 55 economy indicators, 4 of 28 environment indicators, and 14 of 29 society and culture indicators). Annex 5 provides a complete list of unreported KPIs. The results of the KPI evaluation are visualized using the following colour scheme:

- Red is assigned to indicators with values that are 25 per cent below the corresponding benchmarks.
- Orange is assigned to indicators carrying values that are 25 to 75 per cent below the corresponding benchmarks.
- Green is assigned to indicators with values that exceed 75 per cent of the corresponding benchmarks.

The city scored above the 75 per cent benchmark for 19 indicators; between 25 and 75 per cent for 10 indicators; and below 25 per cent for 7 indicators. Figure 17 shows a summary of the city's performance against the KPIs for SCC.

Figure 17 Performance of Tbilisi against the Key Performance Indicators for Smart Sustainable Cities



- <25% target
- 25%-75% target
- >75% target
- no benchmark
- no data

Source: UNECE.

KPI evaluation results: Economy

Of the 55 economy KPIs, Tbilisi reported data for 29 indicators. The evaluation against these indicators revealed strong performance in the sub-areas of ICT infrastructure, water and sanitation and public sector governance; moderate performance in transport and employment; and low performance in electricity supply. For other indicators, data was unavailable or insufficient. This section gives a summary of the evaluation by sub-area.

Given the lack of data, the results of the evaluation are considered through the prism of strategic urban development and the associated imperative of gaining an understanding of the main areas that should form the focus of urban development policies and initiatives. Below is a summary of the results.

ICT infrastructure

Tbilisi scored high in ICT infrastructure. More than 93 per cent of households have access to the internet, with 1.25 fixed broadband subscriptions per household.

Tbilisi also has a high degree of wireless access, with 1,128 wireless broadband subscriptions per 100,000 inhabitants and more than 99 per cent of the city served by 3G and 4G wireless broadband services. In addition, Tbilisi reported 457 public Wi-Fi hotspots.

Electricity supply

Tbilisi revealed low performance in electricity supply even though it fares better than other regions in terms of access to electricity. This low performance is due to the high incidence of a system outage. Tbilisi reported a total of 2,200 electrical interruptions on an annual basis (0.0034 interruptions per customer) with an average length of 1.4 minutes per interruption.

Water and sanitation

Tbilisi registered strong overall performance in water and sanitation. In 2022, 100 per cent of the households had access to water, with 99.83 per cent enjoying access to a safely managed drinking water service and 97.04 per cent having access to basic sanitation facilities.

Despite the lack of data on the percentage of households served by wastewater collection, overall, Tbilisi displayed strong performance against the benchmarks for water and sanitation.

In contrast, the city registered moderate performance in reducing water loss, with 62.18 per cent of total water supplied lost within the distribution system following consumption.

Prevalence of ICT monitoring system

Tbilisi showed moderate performance regarding smart electricity monitoring systems, with 62.55 per cent of the city's electricity supply monitored using smart systems. In 2021, less than 1 per cent of electricity metres installed in the city were smart (i.e. capable of recording consumption, voltage levels and current and power) and only 0.08 per cent of households have smart electricity metres.

Tbilisi performed excellently when it comes to using smart systems for tracking and monitoring water supply, with 100 per cent of the water distribution system monitored using a smart solution. However, the city exhibited low performance in the use of smart water metres, with merely 6.05 per cent of installed water metres classified as smart.

Public sector procumbent

Tbilisi revealed strong performance within the public sector sub-area, with 100 per cent of public procurement conducted online and 2,611 public services provided online.

Transport

Tbilisi performed moderately in the transport area, in part due to the lack of sufficient data. The city recorded strong performance in terms of the percentage of road intersections using adaptive traffic control or prioritization measures, with 80.8 per cent of total intersections equipped with adaptive traffic control. Tbilisi revealed moderate performance in relation to urban transport stops with real-time traveller information provided in 45.23 per cent of total stops and stations.

Tbilisi showed low performance regarding low-carbon emission cars, which accounted for less than 10 per cent of total registered vehicles. It is important to note that there are 240 km of public transport lines in the city and 1.83 km of bicycle paths per 100,000 inhabitants. Further, 27 per cent of travellers prefer walking. The ratio of peak to free-flow period travel time was recorded as 1:1.

Employment

In this area, Tbilisi performed moderately, given the declining unemployment rate. The unemployed affected 20.14 per cent of the labour force in 2021 and was high among youth (38.11 per cent).

KPI evaluation results: Environment

Of the 28 environment KPIs, Tbilisi reported data for only four indicators, with partial data collected for an additional four indicators. To address this gap, the evaluation used corresponding national data from the Ministry of Environment Protection and Agriculture to gain insight into the city's performance.

Based on evaluation of reported data, the following are observations:

- Of the total amount of solid waste disposed of (379,058 tons), 100 per cent was disposed of in sanitary landfills, as opposed to burnt in open areas, incinerated, disposed in an open dump, recycled, or undergoing some other treatment.
- Drinking water quality: Tbilisi reported 11,432 water samples coming from households as conforming to standards set by an audited Water Safety Plan. The average water consumption per capita in Tbilisi amounts to 127.51 litres/ day. Data differentiating fresh water from total water consumption was not available.
- Wastewater treatment: Tbilisi reported 137.6 million litres of wastewater undergoing primary and secondary treatment annually. No data was available on the amount of water undergoing primary and secondary treatment relative to total wastewater or wastewater undergoing tertiary treatment.
- Green spaces: At present, there are 27,843 total hectares of green spaces within the city, corresponding to 2,315.04 hectares per 100,000 inhabitants. There was no data available concerning the percentage of inhabitants with accessibility to green areas (within 300 metres).
- Electricity consumption: Tbilisi showed low performance on per capita electricity consumption, with an annual per capita electricity consumption of 824.63 kWh. Around 12 per cent of the total electricity consumption was consumed in buildings.
- While no data was reported by the city for air pollution (including PM2.5, PM10, NO_2, SO_2, and O_3) and GHG emissions, available statistics show Tbilisi registering substantive reductions in generated hazardous substances from 85,500 tons in 2015 (83.6 per cent was captured) to 44,500 tons in 2020 (42.3 per cent was captured). In 2017-2019, Tbilisi registered the lowest values in generated hazardous substances per year at approximately 25,000 tons, although with slightly higher emission rates (3,200 tons versus 1,900 tons in 2015 and 2,200 tons in 2020).

KPI evaluation results: Society and Culture

Of the 29 society and culture KPIs, Tbilisi reported data for 14 indicators. For unreported indicators, data was either unavailable or insufficient. Below is a summary of the evaluation against these indicators by sub-area.

Education

Tbilisi demonstrated a moderate to high performance in higher education attainment (35,394 higher-level education degrees per 100,000 inhabitants) and a 100 per cent enrolment of school-aged children. However, the city has 187 registered public day-care centres, which accommodate 0.30 per cent of preschool-aged children.

Health

Tbilisi was strong in the health area, with an average life expectancy of 73.4 years and a rate of 31.21 maternal deaths per 100,000 live births. However, the city had moderate availability of in-patient hospital beds with 745.49 beds per 100,000 inhabitants.

Culture

Tbilisi demonstrated moderate performance within the culture sub-area, with public expenditure on cultural heritage amounting to 6 per cent of the city's operating budget.

Safety

Tbilisi displayed moderate performance in safety. Police presence had the highest score, with 280.54 police officers per 100,000 inhabitants. There were 5.07 per 100,000 reported cases of traffic fatalities. Tbilisi also demonstrated moderate availability of firefighters within the city, with 49.8 per 100,000 inhabitants.

Social inclusion

Tbilisi showed moderate performance in closing the gender pay gap, with a female-to-male hourly earnings ratio of 0.67. Furthermore, around 14.47 per cent of the city inhabitants were living below the poverty line in 2021. Of the total number of eligible voters, 43.65 were reported as voting in recent elections, pointing to moderate city performance.

Housing

Tbilisi also demonstrated moderate performance in terms of housing, with housing expenditure representing an average of 12.58 per cent of income. Data for the percentage of inhabitants living in slums, informal settlements or inadequate housing was unavailable.

V. SOCIO-ECONOMIC IMPACT OF THE COVID-19 PANDEMIC

National overview

The outbreak of the COVID-19 pandemic dealt a strong blow to the economy of Georgia. The impact was particularly severe during the initial month, owing to the health protection measures that were imposed by the Government to contain the spread of the virus. As shown in annex 6, these measures involved a nationwide lockdown during the period of 21 March-22 May 2020, which saw the sealing-off of Tbilisi along with other five major cities (Kutaisi, Batumi, Rustavi, Marneouli and Bolnisi) and the closure of educational institutions, non-essential businesses and all forms of public transport.

The lockdown and health protection measures in partner countries of Georgia constituted another channel for transmitting the pandemic's effects. These measures caused severe supply chain disruptions that inflated transport costs with the consequence of isolating enterprises, particularly SMEs, from global supply chains (UNECE, 2020). The economic fallout was deeper than during the 2008 global financial crisis, with real GDP plummeting by 6.1 per cent year-over-year in the 12 months of 2020 (NSO, 2021).[35] In 2021, real GDP grew by 10.6 per cent compared to the previous year (NSO, 2022b). The ripple effects of the fallout were softened by the Government's sweeping relief schemes (see annex 7), which were partly funded by donors (see box 2).

Box 2 Key COVID-19 recovery assistance received by Georgia

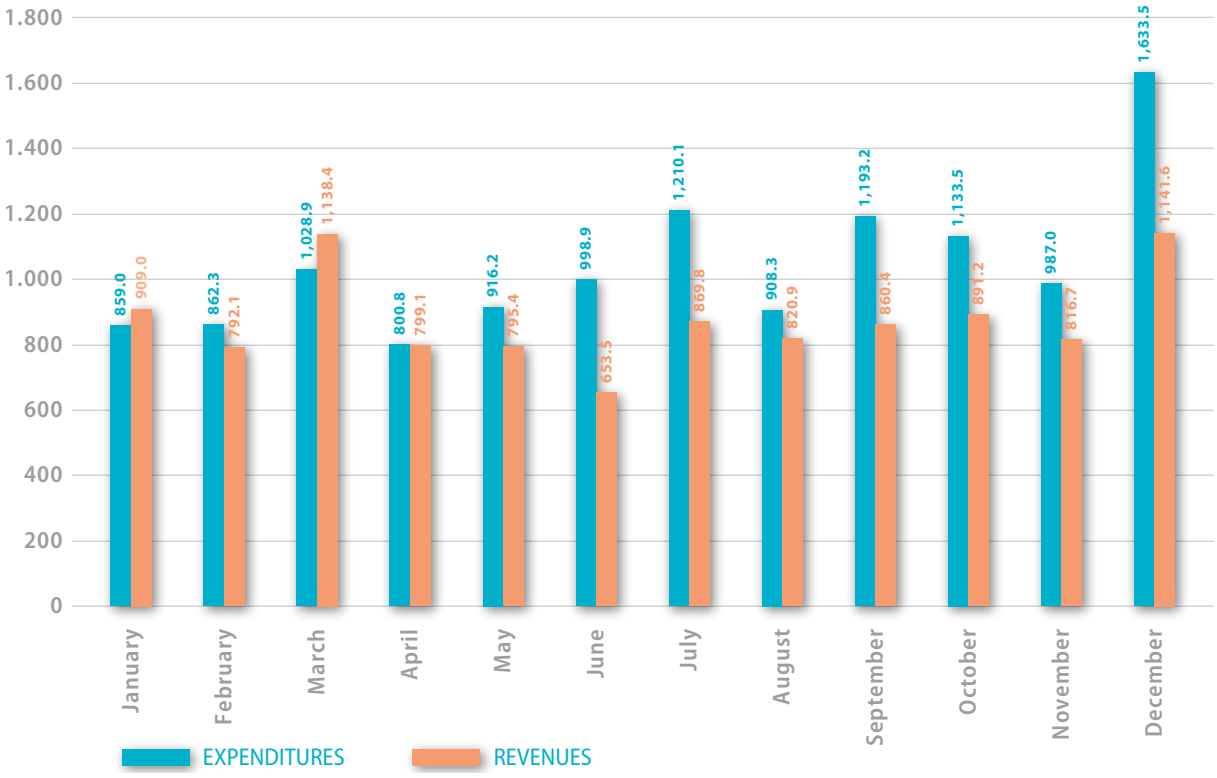
The European Union mobilised a response package worth over 183 million euros (EUR) in grants, in addition to a macro-financial assistance package of EUR 150 million. The three main areas targeted were the health sector, socio-economic recovery and the most vulnerable population. The Asian Development Bank (ADB) COVID-19 response in Georgia totalled nearly USD 565 million, USD 532 million of which in loans (ADB, 2021). Furthermore, in August 2021, Georgia received USD 286 million from the Special Drawing Rights (SDR) allocation of the International Monetary Fund (IMF). Georgia was also among the 46 countries worldwide to be eligible for immediate support from the UN COVID-19 Response and Recovery Fund (OCHA, 2020).

However, these schemes placed a significant burden on the public purse. As shown in figure 18, by the end of 2020, the Government was struggling with mounting financial constraints, as the economic crisis shrank the national tax base. The Government also saw its debt-to-GDP ratio surging to an all-time high from 41.2 per cent in 2019 to 62.4 per cent in 2020.[36]

35 The global financial crisis caused the Georgian economy to contract with real GDP growth at -3.7 per cent in 2009 year-on-year in 2008 (https://mof.ge/images/File/Georgia-The-Outlook_ENG_Apr-2018.pdf).

36 National Bank of Georgia.

Figure 18 The public budget of Georgia, January-December 2020 (Millions of Georgian lari)

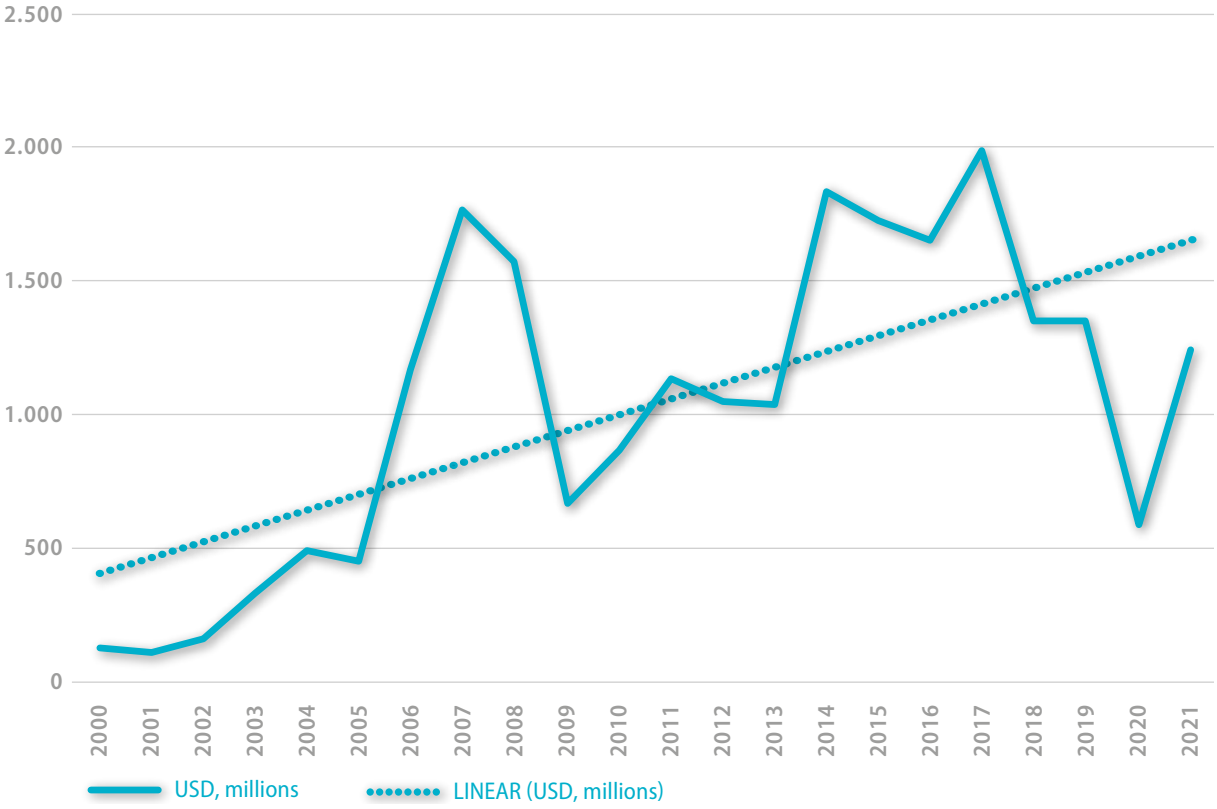


Source: NSO, 2021.

The economy also lost an important source for financing development. FDI inflows declined by 56 per cent from USD 1.35 billion in 2019 to USD 590 million in 2020. The sectors hit hard were tourism, energy and manufacturing. FDI inflows in these sectors in 2019 decreased substantially in 2020. The tourism sector experienced a drop in the number of tourists recording investment outflows of USD 250 million in 2020 vis-a-vis a net inflow of USD 130 million in 2019. The energy sector registered an outflow of USD 7 million in 2020 and an inflow of USD 262 million in 2019. The FDI inflow to the manufacturing sector declined by 70 per cent from USD 117 million in 2019 to USD 35 million in 2020 (NSO, 2022c).

The Georgian economy rebounded in subsequent months. Driven by the services sector, particularly tourism, real GDP grew by 10.5 per cent in 2021 year-on-year (NBG, 2023). Underpinning this growth was a rise in FDI inflows, which registered a two-fold increase year-on-year to reach USD 1.15 billion in 2021 (see figure 19). FDI recovery was partly driven by strong investments in the financial sector, which increased from USD 272 million in 2020 to USD 404 million in 2021 to account for 40 per cent of new FDI inflows. Other important FDI recipients were the energy, transport and construction sectors.

Figure 19 Foreign direct investment flows to Georgia, 2000-2021 (Millions of United States dollars)



Source: NSO, 2022c.

However, the economy is still suffering the lingering effects of the COVID-19 pandemic. Unemployment increased from 18.5 per cent in 2020 to 20.6 per cent in 2021 (NSO, 2022b), which is considerably higher than the European Union (EU) average of 6.4 per cent in December 2021[37]. Furthermore, the household debt-to-GDP ratio is still high at 39.9 per cent in 2021 from 41.9 per cent in 2020. Inequality remains a major issue despite assuming a declining trend, with the national Gini index estimated at 34 in 2021.[38]

The Government is also facing increased financial pressure, with the national debt-to-GDP ratio standing at 42.5 per cent in 2021.[39] These pressures are compounded by the trade deficit which increased from USD 4.7 million in 2020 to USD 5.9 million in 2021 as imports continued to outstrip exports.[40] Furthermore, the economy's immediate growth prospects are undermined by the war in Ukraine, with the World Bank introducing a downward revision to its year-over-year projections for real GDP growth in 2022 from 5.5 per cent to 2.5 per cent (World Bank, 2022).

37 EUROSTAT Statistics Explained, "Unemployment statistics" (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Main_Page).

38 According to data of the National Statistics Office of Georgia on poverty and GINI coefficients (https://www.geostat.ge/en/modules/categories/192/living-conditions).

39 According to key macroeconomic indicators published on the website of the National Bank of Georgia (https://nbg.gov.ge/en/statistics/international-rating).

40 External trade data of the National Statistics Office of Georgia (https://www.geostat.ge/en/modules/categories/35/external-trade).

Table 2 Overview of the public health sector: Tbilisi region, 2020

Description	Georgia	Region of Tbilisi	
		Absolute number	Percentage share
Number of physicians of all specialties - total, thousand	25.4	14.9	58.6
Number of nurses - total, thousand	22.1	10.8	48.9
Number of hospitals and medical centres, unit	264.0	114.0	43.2
Number of hospital beds, thousand	18.6	8.9	47.8
Number of medical institutions rendering out-patient services to the population, unit	2,288.0	460.0	20.1
Number of visits to medical institutions rendering out-patient services the to population (including prophylactics), thousand	13,686.4	9,842.0	71.9

Source: Ministry of Internally Displaced Persons from The Occupied Territories, Labour, Health and Social Affairs of Georgia.

Local economy and unemployment

While the region of Tbilisi registered an increase in per capita income from GEL 324 (USD 104) in 2020 to around GEL 356 (USD 114) in 2021, available statistics point to declining job creation. The region saw the number of employed persons drop from around 405,000 in 2019 to 393,000 in 2020 before registering a further decline to around 380,000 in 2021 (NSO, 2022a). This has translated into higher unemployment rates from 20.1 per cent in 2020 to 23.8 per cent in 2021. Furthermore, around 14.47 per cent of the city inhabitants were living below the poverty line in 2021 (see chapter V).

The Tbilisi City Hall launched further relief measures in 2021 to help the struggling enterprise sector, particularly those engaged in the restaurant industry. According to interviewed officials, these measures involved, among other things, granting 700 households and 155 cafe owners who are tenants of City Hall-owned buildings rental exemptions for 2 years.

While the financial pressures facing the city eased during the second half of 2021 (see chapter VII), city officials see the recovery remaining fragile in light of the political instability in the region. The war in Ukraine is starting to take its toll, causing a decline in trade, tourism, and remittances as well as high oil, energy and food prices, with adverse consequences for the living conditions.

Health care

Tbilisi was a key element in the national COVID-19 response. As shown in table 2, there are three times as many health-care providers and hospital beds in the region of Tbilisi, and the Tbilisi Hospital of Infectious Diseases was the main COVID-19 treatment facility in Georgia. The Tbilisi City Hall also set up telephone and online services to help inhabitants survive the pandemic.

Nonetheless, the pandemic highlighted the persisting capacity shortfalls of the health sector of Georgia, despite recent increases in health-care spending (Nadareishvili and others, 2022). The number of hospital beds was close to 19,000 in 2020, which is equivalent to 5.1 hospital beds per 1,000 inhabitants.[41]

Like many countries across the globe, medical workers in Georgia were overworked and 24,345 health workers were diagnosed with the virus by end of June 2021 (Nadareishvili and others, 2022). As of November 2022, Georgia recorded 16,890 deaths due to COVID-19 and only 31.8 per cent (1,182,310) of the population were fully vaccinated (WHO, 2022). The privatization of the primary health-care system is not optimal as it carries the risk of undermining the country's inclusive and universal health-care system.

41 Computed based on the 2020 population of Georgia (3,716,900).

Environment

Studies from cities around the world showed that the pandemic has significantly improved air quality, and reduced greenhouse gas (GHG) emissions, water pollution and noise.[42] The city of Tbilisi was not different. Evidence shows a significant decrease in the level of air pollution in the city, further highlighting the need to decarbonize transport. A significant increase in ozone in the air and a significant decrease in other atmospheric pollutants were also observed. Moreover, the temporary closure of protected areas and green spaces contributed to biodiversity protection (Amiranashvili and others, 2020).

However, the return to normalcy carries the risk of reversing these environmental gains. The city's growing urbanization is another factor, translating into increased levels and concentration of energy use, and thereof, greater air pollution. In 2019, around 76 per cent of Tbilisi residents singled out air pollution as the most acute environmental problem.[43]

42 See, for example, Khan, I. and others, 2021; Bhat, 2021.

43 Based on a survey commissioned by the National Democratic Institute (NDI) and carried out by CRRC-Georgia which questioned 2,200 people across Georgia (https://oc-media.org/ndi-air-pollution-top-environmental-concern-in-georgia/).

VI. URBAN DEVELOPMENT PRIORITIES AND CHALLENGES OF TBILISI

Drawing on the analysis provided in the previous chapters, this chapter outlines the main urban development challenges under each of the priority areas identified by Tbilisi City Hall officials.

Urban mobility

The city of Tbilisi is car-centric, with private cars constituting the main transport mode for residents. The number of private vehicles increased between 6 and 7 per cent annually over the past decade. As of 2022, there were about 600,000 registered cars, which means that about 1 out of 2 residents owns a car.[44] Moreover, as previously mentioned, less than 10 per cent of registered vehicles are low-emission and most cars lack catalytic converters.[45]

The city's car-centric mobility system reflects the lack of adequate public transport services. As of 2022, the city's public transport comprised the Tbilisi Metro system established in 1966 during the Soviet era. The system spans 26.4 km with 23 stations across 2 lines and was operating at full capacity in 2022, transporting 600,000 passengers daily.[46] Trolleybuses and trams, once important modes of public transport, stopped their operation in 2006. The upshot has been worsening urban congestion and air quality. According to the State Audit Office 2018 report of Georgia, the transport sector was identified to be responsible for 84 per cent of CO and 80 per cent of NO2 emissions in 2016 (Khutsishvili and others, 2021).

To improve urban mobility, the Tbilisi City Hall created the Transport and Urban Development Agency (TUDA) in 2020,[47] which was in the process of developing its first Sustainable Urban Mobility Plan (SUMP) in 2022. Below is a summary of recent initiatives to move away from the current car-centric mobility system.

Public transport

A major improvement to the urban mobility of Tbilisi has been the phasing-out of the privately owned local minibuses (Georgian: *marshutkas*) and the modernization of the public bus fleet between 2019 and 2021. With the support of international organizations, the city is converting the fuel source of its bus fleets to compressed natural gas (CNG). As of April 2022, the city has 600 new Euro 6 CNG engine buses, with plans to operationalize a further 200 18-metre e-buses in 2022-2023. TUDA is also in the process of identifying strategic bus routes to improve traffic flow.

Going forward, the creation of new cable car routes for public transport and increasing the coverage of the Metro system are key priorities, and several feasibility studies have been completed with the support of international organizations. However, the city lacks the required resources to implement these plans. The Ministry of Finance does not have enough resources to approve loan financing for such large-scale infrastructure projects. The increased financial pressures created by the COVID-19 pandemic, coupled with the uncertainties caused by the war in Ukraine, renders the Ministry risk-averse when it comes to incurring additional public debt.

44 Interview with Andria Basilaia, Deputy Mayor of Tbilisi, 16 December 2021.

45 CEEN, interview, 6 September 2021.

46 The Metro of Tbilisi website gives more information on the metro lines of Tbilisi (https://mapa-metro.com/en/georgia/tbilisi/tbilisi-metro-map.htm).

47 Interview with the International Relations and Project Department of Tbilisi City Hall, 07 March 2022.

Universal street design and active mobility

Since 2016, the Tbilisi City Hall has been implementing universal design principles, with a view to improving pedestrian accessibility, reducing congestion and promoting active modes of transport such as walking and cycling. These efforts have so far focused on the central parts of the city, such as Gorgosali Square, Gorgosali Street, Maidan Square and Kote Afkhazi Street, Freedom Square, Rustaveli Avenue Parliament, First Republic Square and Concert Hall Square and Kostava Street. In 2022, work was underway to modernize an additional 10 main roads and sidewalks in different neighbourhoods throughout the city by 2026, with a view to bringing them into compliance with universal urban design standards.

Furthermore, several arterial streets, such as Cholokashvili Avenue, Chavchavadze Avenue, Rustaveli Avenue and Pekini Street, have been upgraded and now include bus-exclusive lanes (Lui and Posada, 2022), though the challenge remains in connecting the different lanes to create an inter-connected network that incentivizes citizens to reduce dependency on cars.

The city also plans to expand bike lanes, which run 22 km in total length. A bikeshare demand assessment and system design feasibility study is being developed by the Institute for Transportation and Development Policy (ITDP). Additional priorities for the city include establishing e-scooter sharing systems and developing electric vehicle charging infrastructure.

Most ambitious is the city's efforts to implement a modern urban design – superblock – to give cities back to pedestrians. This design involves creating mini neighbourhoods bounded by arterial roads where traffic would flow, and where spaces are repurposed to cater to the residents' everyday needs. Superblocks are gaining increased popularity for combating climate change (see box 3).

Box 3 Superblocks

A study carried out by the Barcelona Institute for Global Health suggested that the introduction of 503 superblocks in the city would see journeys by private vehicles fall by 230,000 per week. As people switch to public transport, walking and cycling, ambient levels of NO_2 would be reduced by a quarter and noise levels would improve. There would also be health benefits for residents – as many as 667 premature deaths from air pollution, noise and heat could be prevented – which would reduce pressure on health services and the public purse.

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Zonal parking system

To address traffic congestion and disincentivize the use of private motorized vehicles, Tbilisi introduced a zonal parking fee of GEL 1 per hour, which can be paid through a mobile application. In 2022, the zonal parking covered about 65 per cent of the city, with plans to expand the system's coverage to the entire city and gradually increase the parking fee to GEL 3 per hour.[48]

Housing

During the Soviet period, Tbilisi's housing sector experienced a surge in demand as more and more Georgians and citizens from neighbouring countries moved to the city in search of better job opportunities. However, this boom resulted in a legacy of poor-quality housing. In addition, many housing units featured structural extensions, in the form of balconies, loggias and verandas, which were not necessarily compliant with quality and safety standards. They were aesthetically questionable, exhibiting a "makeshift look" with structural extensions exceeding the buildings' planned dimensions.[49]

This legacy persisted following the country's independence, which saw the housing sector undergo broad restructuring in the absence of a coherent strategy. The Government focused on withdrawing from housing provision through mass privatization, with little attention to the private sector's readiness to engage in the housing sector. New owners of property (mainly of flats in apartment blocks) appeared overnight without the requisite experience and resources and operated in the absence of oversight and guidance.[50]

To address these challenges, the Government undertook extensive legislative reforms in mid-2000s to bring the predominately privately-owned housing sector up to internationally recognized standards and best practices. Most notable among these reforms was the law "On Homeowners' Associations"[51] of July 2007, which expanded on the general concepts of common home ownership and management of multi-apartment buildings enshrined in the Civil Code[52] by articulating the responsibilities and obligations of homeowners in relation to the maintenance, exploitation and development of multi-apartment buildings. In addition, to ensure adequate housing, the Supreme Court of Justice set the floor area per person at 16 m² in 2021.

Addressing the problem of poor-quality housing ranks high on the agenda of the City Hall. However, no inventory or assessment has been done to date, and the City Hall does not have a vision nor the funds to undertake structural retrofitting and redevelopment of its ageing housing stock. The point was made that establishing such a vision is difficult in the absence of a coherent housing strategy. Moreover, coordinating local and national efforts is complicated by the lack of a clear demarcation of roles and responsibilities between the different agencies involved in housing policy at the national level. There is also a need to reconsider the living space per person, which is well below EU averages[53] and is not in line with the spirit of the Right to Adequate Housing.[54]

48 International Relations and Project Department of Tbilisi City Hall, interview, 07 March 2022.

49 In 1989, the last communist Government issued a law permitting residents to expand their living areas by enclosing balconies, loggias and verandas or adding extensions to their apartments provided they submitted the corresponding plans for building extension. It remains to be assessed how many of these extensions were actually carried out with proper permission (Country Profiles on the Housing Sector: Georgia, 2007).

50 The Government did not provide guidelines on the management and maintenance of flats in multi-apartment buildings and the government body responsible for overseeing the maintenance of such flats and buildings was abolished (Country Profiles on the Housing Sector: Georgia, 2007).

51 The Law on Homeowners' Associations defines the duties and obligations of homeowners' associations, as well as their organizational aspects, daily operations and liquidation.

52 The Civil Code of 1997 and subsequent amendments establish the general concepts of housing ownership as well as those pertaining to the management and maintenance of multi-apartment buildings

53 The lowest is Romania with an average floor space of 21.23 m² per person (https://entranze.enerdata.net/).

54 A. Tsintasbadze and others, interview.

Efforts to improve housing quality have been implemented within the context of municipal programmes for housing maintenance (Salukvadze, 2016). In recent years, these programmes focused on inner-city renovations in light of the 2002 earthquake which resulted in the destruction of 20,000 homes in Tbilisi.[55] The renovations were carried out within the context of the *New Life for the Old Town* project launched in 2009. The project has also seen the restoration of many pastel-coloured houses and monuments in the historic districts, although critics argue that in some parts of the Old Town, restoration happened too fast and without proper spatial planning. In 2022, the project involved the allocation of GEL 269 million (USD 86.5 million) for renovating residential and non-residential buildings.[56]

In addition, over the past two years, the City Hall has been focusing on addressing the problem of unfished housing projects that were abandoned by construction companies owing to the lack of funds. The Tbilisi City Hall also supports the Homeowners' Association, with members registered with local authorities participating as direct beneficiaries in municipal and donor-funded housing development programmes. In addition, buildings managed by the Homeowners' Association are eligible for municipal co-financing for the repair of common spaces (roofs, staircases) and public spaces (courtyards), with the City Hall covering over 50 per cent of repair costs. However, associations lack adequate financial resources, with many experiencing high incidents of non-payment of membership fees. In addition, decision-making is often impeded by low engagement of members of the board of directors, with regular meetings punctuated by low-attendance rates. This constraint, coupled with the associations' lack of expertise and skills, is setting the limits to their ability to act as an engine for modernizing the city's housing stock (both existing apartments and newly constructed multi-apartment buildings).[57]

The city is planning a further expansion in its housing stock. As shown in table 3, Tbilisi, which has consistently enjoyed the lion's share of the country's housing stock, accounted for 56 per cent of total housing construction permits in 2021. An additional area of 825 hectares is expected to be developed for housing purposes by 2030 (City Institute, 2019).

Table 3 Housing stock: Tbilisi

Year	Number of issued permits for residential units	Share in total issued permits for residential units (percentage)
2016	3.932	56
2017	3.847	57
2018	3.740	55
2019	4.053	55
2020	4.120	61
2021	4.104	56

Source: Statistical Yearbook of Georgia 2021.

However, in many cases, new housing construction projects involved luxury flats which were only accessible to high-income households. As shown in figure 20, housing prices in Georgia for both flats and detached houses, measured in terms of the Residential Property Price Index (RPPI),[58] show an increasing trend, reflecting increasing demand. This demand registered a further increase during the first quarter of 2022, particularly for flats, with prices increasing by around 5.4 per cent year-over-year compared to around 2 per cent for detached houses. The rising prices pose a serious obstacle to affordability. This is evidenced from a cursory examination of the households' monthly expenditures on housing, water and energy, which far exceeds the amounts spent by households in other regions (see figure 21).

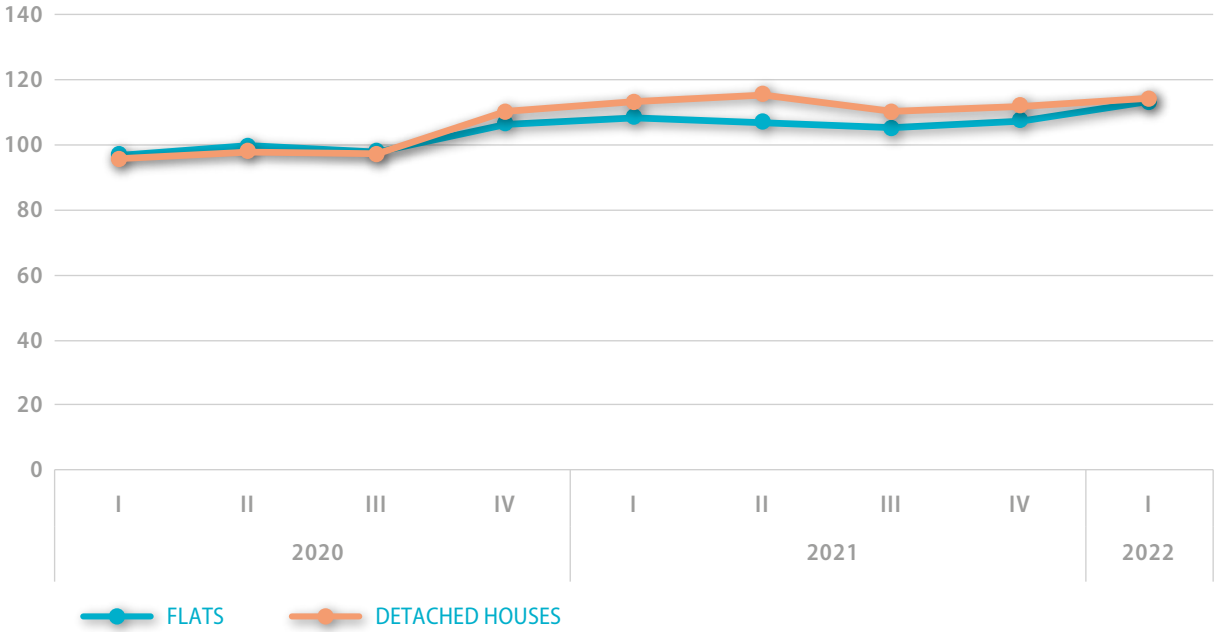
55 *Country Profiles on the Housing Sector: Georgia* (2007).

56 A. Basilaia, interview.

57 Role and importance of homeowners association in Georgia (2017). Available at https://issuu.com/nino5/docs/article_homeowners_association_geor.

58 The RPPI covers the market of new residential property in Tbilisi, both flats and detached houses segments.

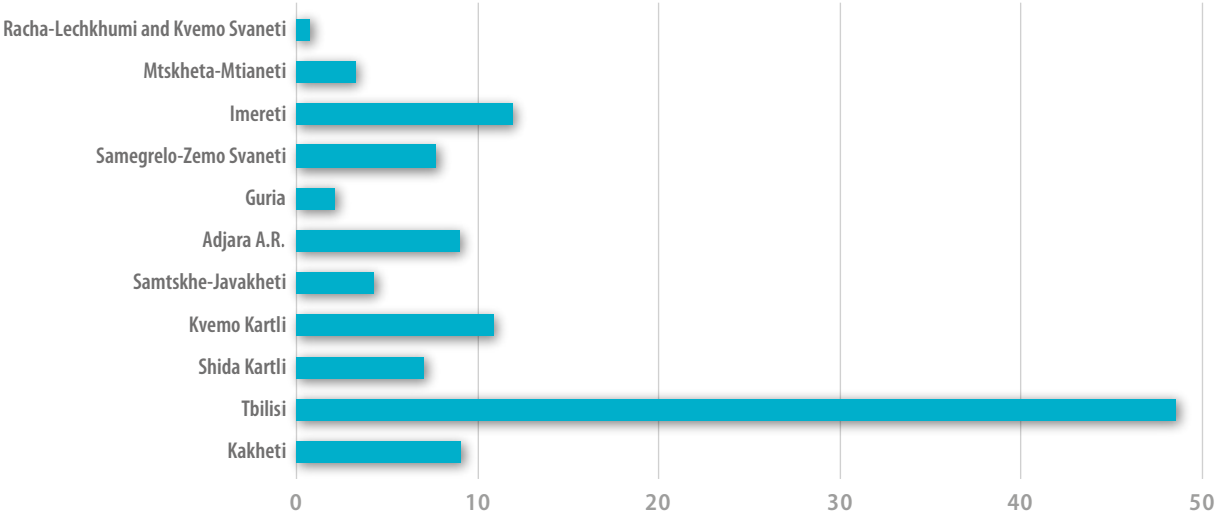
Figure 20 Residential Property Price Index, flats and detached houses: Tbilisi



Source: NSO, Residential Property Price Index in Georgia: 2022 1 Quarter (https://www.geostat.ge/media/44707/Residential-Property-Price-Index-I-quarter-of-2022.pdf).

Note: 2020 average = 100.

Figure 21 Georgia: Average monthly expenditures of the total population on housing, water, electricity, gas and other fuels, by region, 2021 (Millions of Georgian lari)



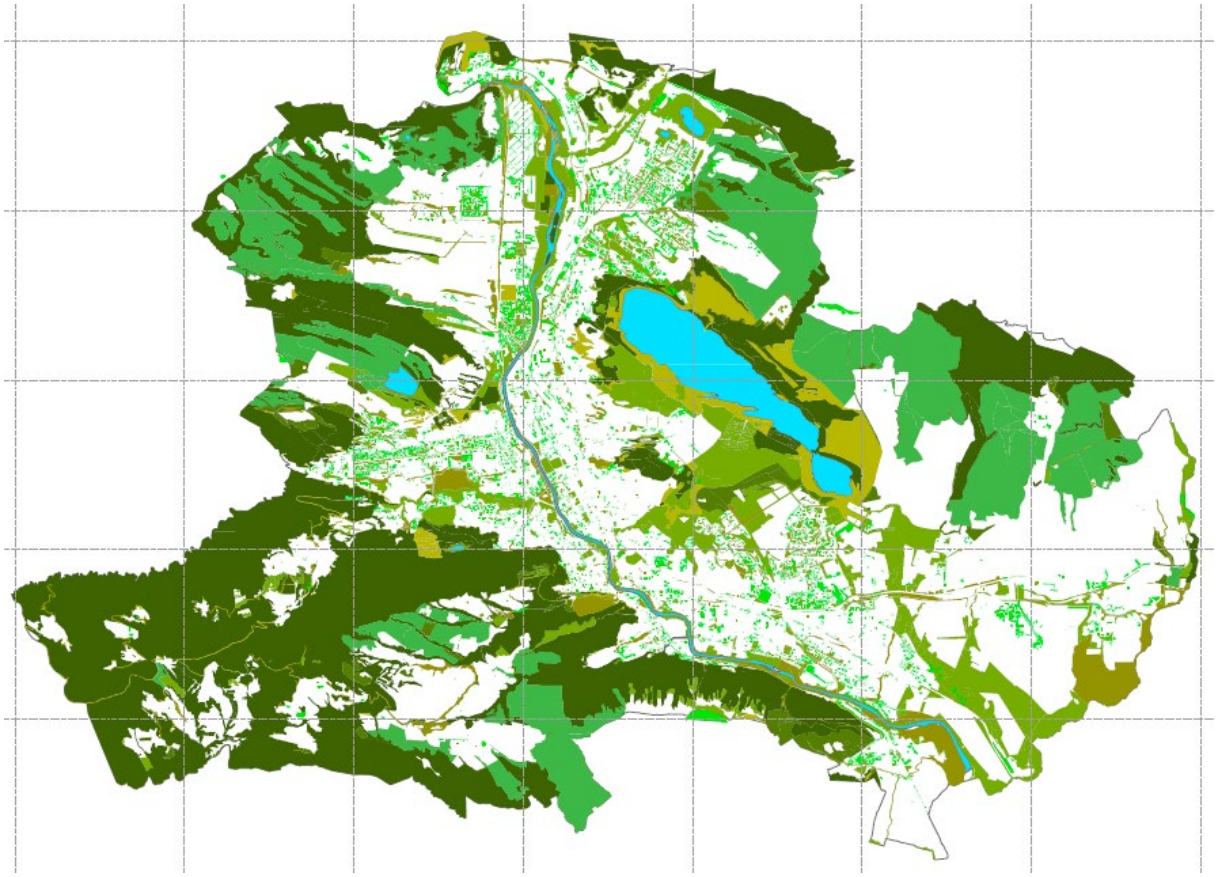
Source: NSO, 2022d.

However, social housing is provided only to the homeless and IDPs from the occupied territories of Abkhazia and South Ossetia. As of April 2022, around 10,000 IDPs benefited from social housing. Households and individuals belonging to low-income group are not covered by the social housing programme, even though at least 70 per cent of Tbilisi residents are unable to afford homeownership. More could be done to support the homeless, with many squatting 500 abandoned buildings around the city (as of April 2022).[59] A programme for providing housing to the homeless was recently implemented in Tbilisi, with 300 people initially registered for temporary accommodation. The goal is to gradually expand this programme to other vulnerable segments of the population.

Green and open spaces

Over the last twenty years, the city has seen its green spaces shrink in the face of a consistent prioritization of investments in buildings and urban infrastructure (see figure 22). Green spaces, forested areas, agricultural and other unsealed spaces were transformed into built-up areas, causing public green area per capita to shrink to less than 4 m^2.[60] Moreover, the reallocation of land proceeded in the absence of a solid urban policy framework to hedge against soil erosion and protect the city's biodiversity and the environment, thereby aggravating exposure to environmental hazards.[61]

Figure 22 Green spaces: Tbilisi



Source: City Institute Georgia (2019).

59 A. Tsintasbadze and others, interview.

60 City Institute Georgia (2019).

61 Patarkalashvili, 2017.

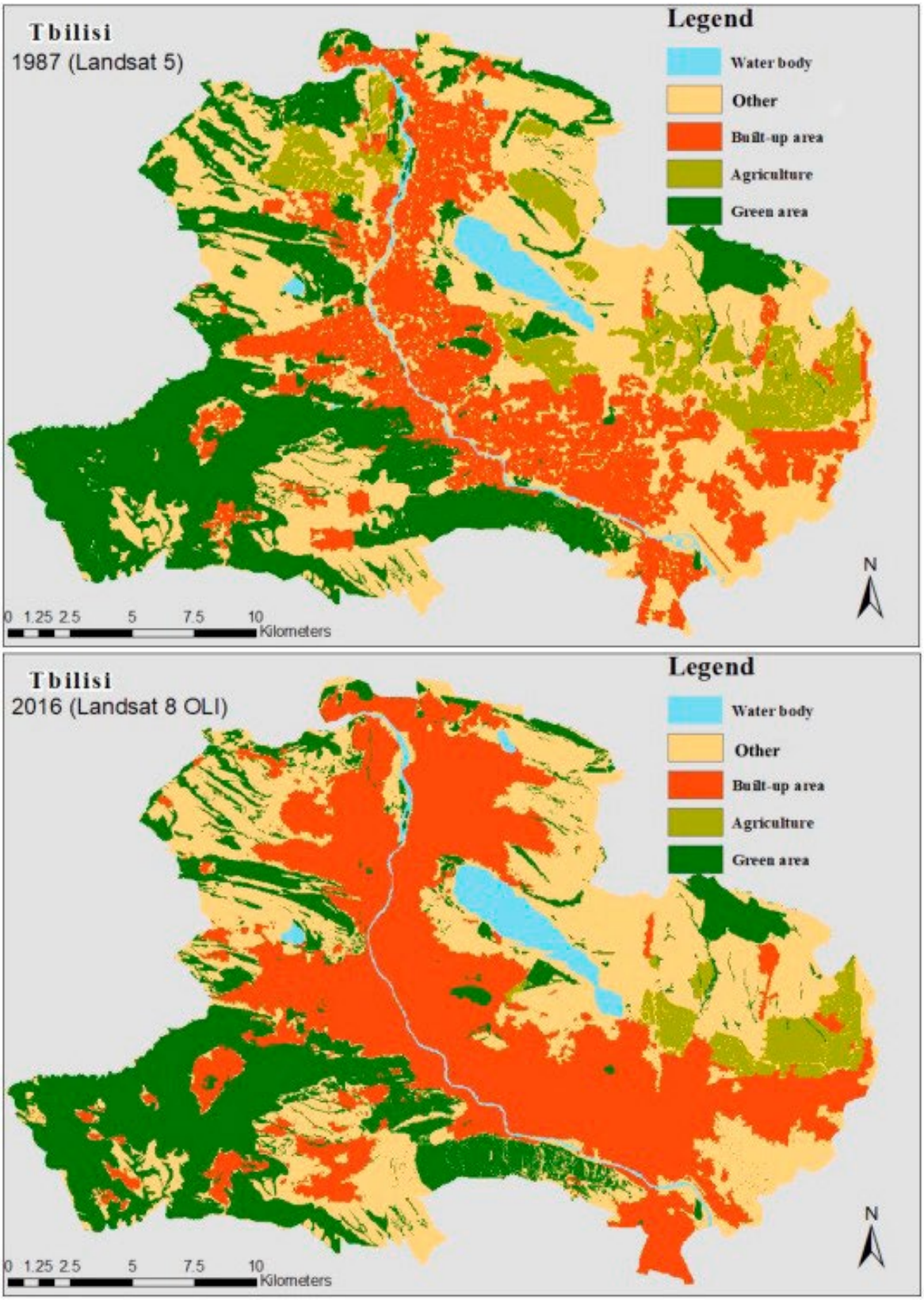
Expanding urban green spaces, including trees and vegetation, ranks high on the City Hall's agenda as a way for mitigating the urban heat island effect and improving the microclimate in summer and winter. The city's Land Use Master Plan sets public green area per capita to a minimum of 10 m², and the City Hall has taken several steps to achieve this goal. In 2021, the municipality committed itself to create 9 new parks and revitalize six parks over the period until 2025; plant at least 300,000 trees; and transform 200-hectare area covering Mtatsminda, Tbilisi Sea, Makhata Mount, Nutsubidze and Jikia slopes into urban forests. Several City Hall-led greening programmes, including an initiative to turn old garages into green spaces and a new programme to plant new trees in front of residential buildings are currently being implemented (Agenda.ge, 2021c).

However, the design of new green spaces in Tbilisi faced criticism over illumination, as well as too many sealed spaces within the parks. Moreover, the road ahead remains long. As shown in figure 23, from 1987 to 2016, the built-up area increased from 23.63 to 37.53 per cent of the city's land surface areas while the share of green area reduced from 29.12 to 23.45 per cent, with the remaining forested areas concentrated in the right bank of the Mtkvari River (Gadrani and others, 2018).

Tbilisi has large areas of brownfields, which are located on abandoned industrial zones,[62] and consist of properties that are contaminated or potentially contaminated with hazardous pollutants. These large areas account for about 30 per cent of the land surface of Tbilisi and are responsible for fragmenting the city at a time when they can be used for revitalizing surrounding neighbourhoods and for increasing the housing stock (EMPRESS, 2017).

62 These industrial zones were abandoned following the dissolution of USSR. They covered 17.4 per cent of the city's total land surface in 1990 (Gadrani and others, 2018).

Figure 23 Land use land cover change: Tbilisi, 1987-2016



Source: Gadrani and others, 2018.

Water management, blue spaces and disaster risk management

The population of Tbilisi enjoys water supply[63] from the underground water of the Aragvi Gorge and the Zhinvali water reservoir and Tbilisi Sea. The water is supplied through the water network of GWP, which runs 3,600 km in total length and is supported by 84 service reservoirs spread across 35 locations with total capacity of 300,000 m3. GWP operates 141 pressure pump stations to overcome the distribution challenges created by the mountainous relief of Tbilisi and has a modern self-flowing drainage system which stretches 1,600 km in total length and discharges wastewater into the Mtkvari River after treatment.

For GWP, water management is not just about the supply of drinking water and the treatment of wastewater. The company sees water supply and wastewater management as integral to climate change mitigation and adaptation as well as the improvement of the city's quality of life, especially since the effects of climate change, like heavy rainfall events, are placing a growing burden on the city. The heavy rainfall of June 2015 provides a glimpse of climate change impacts. The city experienced flash flooding from the overflowing of the riverbanks that claimed 21 lives and resulted in around USD 50 million in infrastructure damage. The areas around the Mtkvari River in the west of Tbilisi were the hardest hit; debris destroyed buildings and infrastructure that clogged the river flow and triggered a large-scale landslide between the villages of Tskneti and Akhaldaba (MEPA, 2021; Alexander, 2015).

This impact reflects the vulnerability of Tbilisi to flooding, caused by the city' geomorphology, unplanned urbanization, sealing of soil surfaces, concrete channelling or covering of 12 of the city's rivers, and a malfunctioning in the drainage system (Tbilisi City Hall, Resilience Office, 2019). The need to improve the management of stormwater for reducing surface runoff is evident. In the aftermath of the flash flooding, the Tbilisi City Hall introduced regulations to prevent the issuance of building permits in risk areas and adopted a flood early warning system and installed a monitoring system in three landslide zones in 2016, which were consolidated with an additional monitoring system that was installed on Matchavariani Street and nearby slopes. In 2022, preparations were underway to install 37 smart sensors throughout Tbilisi to strengthen the city's resilience to the effects of climate change, including flood risks, and prevent the degradation of surface water quality.[64]

Yet, more needs to be done to preserve the Mtkvari River which has been contaminated by the unplanned urbanization and prioritization of transport infrastructure. Currently, there are highways along the two banks of the river causing water contamination with high levels of pollutants from surface run-off from roads and industrial sites. The Tbilisi City Hall started addressing this issue as part of a broader effort to valorise the city's blue spaces. These efforts have focused on improving accessibility to the Mtkvari River. A feasibility study on the development of public and tourist transport services on the river is currently under preparation by the Tbilisi Development Fund (TDF), and there are further water bodies within the city's territory – like the Tbilisi Sea – that could be developed towards a quality blue space.

Waste management

The lack of detailed, reliable statistical information on waste quantities and waste generation is a key challenge for waste management in Tbilisi. As part of the KPI collection process, the Tbilisi City Hall reported that the city generated 379,058 tons of municipal solid waste (MSW) in 2021. Estimations published by the World Bank show that Tbilisi generated around 411,450 MSW in 2019, including 60,467 tons of plastic waste.

While the city's MSW collection rate is at 99 per cent, the collected waste is mostly not separated and ends up in landfills instead of being recycled. The need to strengthen waste management with a strong focus on recycling is evident. World Bank (2021) estimates

63 The coverage rate of water supply in Tbilisi was already 100 per cent by 2008 (UNECE, 2016). For further discussion on water storage and distribution and drainage systems of Georgia, see https://www.gwp.ge/en/home.

64 The sensors will be installed within the context of a technical assistance project that is being implemented by the City Hall in cooperation with the Tbilservice Group SUEZ Group.

the city's potential for dry recyclables at 131,781 tons (36.7 per cent of collected MSW). Below is a summary of the recent initiatives of the City Hall for improving waste management:

- With loan funds from the European Bank for Reconstruction and Development (EBRD), the City Hall, in cooperation with Tbilservice Group Ltd, is in the process of procuring low-emission vehicles to increase the efficiency of waste collection and reduce waste-related emissions by an estimated 18 per cent, according to EBRD experts.

- Within the context of an EBRD-funded project, the City Hall, in cooperation with Tbilservice Group Ltd, developed a Municipal Solid Waste Strategy along with an action plan to bring the city's solid waste management into compliance with EU requirements.

- Within the context of the Waste Management Technologies in Regions Program, 25 waste collection points have been installed in public spaces throughout the city. In addition, the Tbilisi City Hall, Tbilservice Group Ltd, Caucasus Environmental NGO Network (CENN) and the Waste Management Association of Georgia signed a Memorandum of Cooperation, which envisages a gradual introduction of a waste separation system in the city and the promotion of the reuse and recycling of waste (Tbilisi City Hall, 2018b).

- Within the context of an EBRD-funded project, a Stakeholder Engagement and Stakeholder Participation Programme was launched in 2018 to help the City Hall and Tbilservice Group Ltd ensure systemic public engagement in solid waste management. This includes raising public awareness on the different aspects of solid waste management.

Urban policy and governance framework

Many of the urban development challenges facing Tbilisi can be attributed to the lack of a coherent urban policy and governance framework, with development efforts proceeding within the context of sectoral plans. This has resulted in a piece-meal approach that fragments efforts and undermines building on realized achievements, especially since sectoral plans are not adequately coordinated. For example, over the past 20 years, local transport development was disconnected from urban planning.

The upshot has been the exacerbation of existing problems, including unplanned urban sprawl; poor-quality housing; shortages of affordable, adequate housing; traffic congestion; air and sound pollution; unfriendly urban design; and the lack of green spaces, among others.

The necessity of strengthening the capacity of the City Hall in the field of spatial and urban planning cannot be over-emphasized. There is also a need to consolidate a coherent urban policy and governance framework for facilitating the coordination and alignment of interventions between the different levels of government. The creation of SUDA is an important step in this direction. In 2022, the Agency was in the process of developing a first-of-its-kind National Spatial Plan and was seeking to expand the territorial coverage of land-use plans (i.e., zoning plans), with officials noting that existing plans do not cover all the territories of Georgia. SUDA was also seeking to adopt EU best practices, particularly those related to ensuring compliance with the harmonized legislation requirements in the fields of renewable energy and environmental protection as well as those pertaining to consumer safety. However, the ability of SUDA to deliver on its mandate was challenged by the lack of financial resources as well as the lack of expertise skills, given the limited pool of national experts in the areas of spatial planning and urban development.

Overall quality system underpinning construction and urban infrastructure

As of June 2022, Georgia has 162 CABs, the majority of which are privately owned. As shown in annex 8, inspection bodies and testing laboratories accounted for the largest share (over 80 per cent of the total accredited CABs), with medical laboratories, product certification and personal certification bodies making up for the remaining balance.

The need to establish additional laboratories, particularly for product certification, is evident, and the private sector should contribute to addressing this shortage. There is also the need to enable national enterprises engaged in construction, basic infrastructure development and the provision of basic utility services to implement ENs and international standards. In addition, there remains room for further developing market surveillance of existing residential and non-residential buildings and infrastructure to ensure compliance with regulatory requirements.

VII. FUNDING AND FINANCIAL FRAMEWORK

Mirroring the economy's upward income growth, the City Hall's revenues have been registering consistent growth over the past years. As shown in table 4, public revenues, generated from value-added and property taxes, increased from around GEL 868 million in 2016 to GEL 1.4 billion in 2022. The City Hall receives funds from the central Government, the amount of which increased by around GEL 49 million (USD 15.8 million) year-over-year in 2021 to reach GEL 143 million (USD 46 million) to help the city cope with the lingering effects of the COVID-19 pandemic. However, allocation dropped to GEL 100 million (USD 32 million) in 2022, reflecting the increased financial pressure on the central Government (see chapter III).

In terms of funding priorities, in addition to completing the unfinished residential buildings (see chapter VI), the city is focused on infrastructure development, improving social and health-care services and addressing climate change, thus, receiving the bulk of the city's expenditure as well as investments. During 2018-2021, the Tbilisi City Hall invested over GEL 2 billion in the procurement, maintenance, and implementation of infrastructure development initiatives with a view to improving urban mobility. It also invested over GEL 1 billion (USD 643 million) in social and health care over the same period (Agenda.ge, 2021b) and doubled its investment in environmental protection, committing to spend GEL 300 million (USD 96.5 million) on green spaces in 2022 (A. Basilaia, Interview, 16 December 2021; Agenda.ge, 2021a).

Nonetheless, officials noted that the municipal budget remains insufficient to meet present and future urban development needs, particularly in the area of infrastructure development and capacity-building. Major expansion and maintenance projects remain unfunded, including the metro, cable car and bus networks. As sub-national borrowing is not allowed in Georgia, external funds are obtained through grants and capacity-building projects, with the approval and oversight of the Ministry of Finance. Between 2018-2021, Tbilisi mobilised about GEL 284 million from donors (Agend.ge, 2021b) along with advanced training for municipal staff on key urban development areas such as traffic modelling.

Table 4 Budget of the Tbilisi City Hall (Thousands of Georgian lari)

Description	2020 (actual)	2021 (estimate)	2022 (plan)
Receipts	930,239.6	1,201,097.,6	1,493,203.1
Total revenues	868,463.4	1,128,769.6	1,388,103.1
Non-financial assets receivables	61,678.4	72,184.9	105,000.0
Financial assets receivables, excluding balance	94.5	143.2	100.0
Increase in liabilities (incoming cash flows from capital receipts)	3.3	–	–
Total payments	1,080,555.4	1,270,531.8	1,567,982.6
Expenses	825,205.1	1,002,078.4	1,214,130.9
Investments in non-financial assets	239,300.9	255,733.5	340,841.7
Decrease in liabilities (payments of debt capital receipts)	16,049.5	14,878.2	13,010.0

Source: Tbilisi City Hall (https://www.tbilisi.gov.ge/page/43?lang=ge).

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In view of the above, the municipality, working closely with the Tbilisi City Hall, has been raising private financing through public-private partnerships (PPPs). So far, PPPs have been used to finance the completion of unfinished residential buildings. The partnerships involved nine of the biggest national construction companies, which were completing the construction of 15 residential buildings in 2022 that will accommodate 6,200 families. The Municipality also raised an additional GEL 53.8 million (USD 17.3 million) to complete the construction of eight unfinished construction sites owned by 4,000 families and to provide financial compensation for the most affected low-income families.

VIII. RECOMMENDATIONS

Tbilisi has been experiencing rapid urbanization over the past two decades, underpinned by rising income levels and marked improvements in urban infrastructure and utility services. However, urban development proceeded in the absence of environmental planning and a coherent approach to housing. This has resulted in unplanned urban sprawl, substandard and unaffordable housing, traffic congestion, air and sound pollution, unfriendly urban design, lack of green open spaces and waste separation, among others.

In the last five to seven years, Tbilisi has made important progress in addressing these problems. However, it lacks the financial and human resources to forge ahead with its urban development plans. Urban development is also undermined by the lack of CABs and adequate market surveillance systems for ensuring the quality and safety of buildings, urban infrastructure and basic utility services.

Below are proposed recommendations for the consideration of the Tbilisi City Hall and the Government of Georgia. The recommendations are organized by priority area and are sequenced along a timeframe, which spans from short-term (0-2 years) to medium-term (2-5 years) to long-term (more than 5 years).

1. Urban policy and governance framework

1.1 Consolidate a coherent system for spatial planning and urban development

- **Strengthen the capacity of the City Hall in the fields of spatial planning and urban policy.** A particular issue is the capacity to integrate disaster risk assessment and management into spatial planning, which requires further developing the city's data collection on natural hazards. In this respect, special emphasis should be given to fostering collaboration with national and international educational and knowledge centres within the context of partnership agreements. In addition to advanced training programmes, internships and traineeship programmes provide a practical avenue for supporting the City Hall staff. Capacity-building should also focus on both the technical and policy aspects as well as project management, including the preparation of bankable projects, as an essential element of urban planning **(short/medium-term)**.
- **Strengthen City Hall's engagement with city inhabitants** by improving existing mechanisms for facilitating broad-based public consultations on city plans **(short-term)**.
- **As Georgia proceeds with transposing the EU Regulations and Directives (see annex 4), priority should be given to ascertaining gaps in national secondary legislation** with a view to identifying amending or repealing contradictory laws and identifying capacity needs for ensuring successful implementation **(short-term)**.
- **SUDA needs to be further supported in the following areas:**
  - Finalizing the National Spatial Plan of Georgia **(short-term)**.
  - Strengthening capacities in the areas of spatial planning and urban policy, with a special emphasis on integrating disaster risk assessment and management as part of the planning processes **(short-term)**.
  - Upscaling capacities for developing land-use plans **(short-term)**.
  - Creating a modern online system using international ICT standards and international best practices for streamlining, standardizing and simplifying administrative procedures associated with issuing Development Regulation Plans **(medium-term)**.
  - Developing a consultative mechanism for engaging with local authorities as a pre-requisite for ensuring a coherent approach and supporting local authorities in implementing local spatial plans and urban development policies **(short-term)**.
  - Preparing a national urban development policy and an awareness-raising campaign on the importance of spatial planning and urban development, as a key requisite for engaging city inhabitants in urban planning processes **(short-term)**.

  In addressing SUDA needs, special emphasis should be accorded to partnering with national agencies for spatial development in Europe and beyond to gain insights into successful experiences and best practices.

- **Develop a second National Disaster Risk Reduction Strategy** building on the achievements of the first strategy for the period 2017-2020 and action plan. The first strategy focused on establishing the unified disaster risk reduction (DRR) system for improving disaster preparedness and response capabilities at national and local levels **(short-term)**.[65]

1.2 **Further develop the digital land administration system of Tbilisi.** Tbilisi has digital land administration with interactive maps and data on cadastre and land use.[66] The next step would be to further develop this system by adding social data (e.g. crime and health) and commercial real estate data **(short/medium-term)**.

1.3 Complement the Land Use Masterplan of Tbilisi with **an ecosystem-based management approach (short-term)**. Consistent with international based practices,[67] the masterplan should:

- Emphasize the protection of ecosystem structure, functioning and key processes.
- Be place-based in focusing on a specific ecosystem and the range of activities affecting it.
- Explicitly account for the interconnectedness among systems, such as between air, land and sea.
- Integrate ecological, social, economic and institutional perspectives, recognizing their strong interdependences.

1.4 As part of the **ecosystem-based management approach, consider integrating nature-based solutions** for reducing the city's fragmentation. Such solutions could range from sustainable forest management to infrastructure-related solutions (i.e., green and blue infrastructure).

1.5 **Make salaries in the public administration more competitive** to attract talent **(medium-term)**.

1.6 Improve the **gender balance** in decision-making roles within the City Hall through the gradual introduction of quotas for key positions **(medium-term)**.

2. Urban mobility

2.1 **Increase the coverage of the zonal parking system** to include the entire city **(short-term)**.

2.2 **Increase the coverage of the bus routes and expedite the introduction of modern, low-emission buses.** In addition, accord priority to extending bus coverage to the urban periphery to connect the Tbilisi centre with surrounding neighbourhoods **(short/medium-term)**.

2.3 **Accord priority to developing the infrastructure for active mobility** by removing barriers for cyclists and pedestrians and making the 22-km long bike network more comprehensive and safer **(short/medium-term)**.

2.4 Increase the coverage and frequency of the **metro system** and develop **cable-car routes for public transport (medium/long-term)**.

2.5 Consider establishing a **metropolitan railway network to facilitate inter-city commuting between Rustavi, Tbilisi and Mtskheta (long-term)**.

65 National Disaster Risk Reduction Strategy of Georgia 2017-2020 (https://www.preventionweb.net/files/54533_drrstrategy2017annex1eng.pdf).

66 http://maps.tbilisi.gov.ge/#/C=44.7807474-41.7138468@Z=14.

67 As elaborated by the Communication Partnership for Science and Sea (COMPASS) Scientific Consensus Statement on Marine Ecosystem-Based Management (https://marineplanning.org/wp-content/uploads/2015/07/Consensusstatement.pdf).

2.6 **Consider rerouting main road arteries away from the Mtkvari River**. This will also improve the city's liveability, providing more space for recreation and connecting with nature **(medium/long-term)**.

3. Housing

3.1 **Carry out a technical assessment survey of multi-apartment buildings** to identify buildings that could be retrofitted and buildings that should be demolished **(short-term)**.

3.2 **Develop a national housing strategy**, focused on improving the affordability and climate resilience of the city's housing stock as well as on increasing the supply of adequate housing. The strategy should also focus on strengthening coordination and synergies between the national and local levels, by articulating a clear division of roles and responsibilities along with coordinating mechanisms **(short-term)**.

3.3 **Develop multi-year national and city-wide action plans** for ensuring the successful implementation of the housing strategy. The plans should articulate clear goals, benchmarks and activities for developing the country's/city's housing stock and for addressing national and local capacity shortfalls at the planning and implementation levels **(short/medium-term)**.

3.4 **Strengthen the Homeowners' Association** with the required expertise and skills. The Homeowners' Association could also consider establishing a policy on non-payment of membership fees and non-participation of board members.

3.5 **Introduce green, energy-efficient schemes** for residential and non-residential buildings **(medium-term)**.

3.6 **Accord priority to using the brownfields. In this respect, establish a special programme for financing the evaluation, clean-up, and job training to enable local communities to safely and effectively transform contaminated properties in brownfields**. There are at least 60 large brownfield sites in the city, covering 1,500 hectares. These could be reused for housing and other purposes (e.g. as parks and plazas), thereby generating positive spill-over effects, including better permeability **(medium/long-term)**.

4. Green and open spaces

4.1 **Develop pocket parks, that is, mini parks,** in dense inner-city areas with limited open and green space **(short-term).**

4.2 Develop **park design guidelines** that promote recreation as well as biological diversity. The guidelines should contain a list of plants that are resistant to the changing climate and suitable for the local climate, as well as design requirements that take into account citizen needs and, for example, place urban furniture, sanitation facilities, etc. **(short/medium-term).**

4.3 Establish **urban green infrastructure in the form of corridors** to link open and green spaces in the city. Such corridors provide passage for wildlife as well as for cyclists and pedestrians **(long-term).**

5. Urban water management and blue spaces

5.1 **Further develop the City Hall's early warning system** with a department dedicated to the task and a strategy for climate change adaptation and mitigation along with a flexible multi-year action plan. The strategy should form an integral element of the city's water management system and be based on an integrated approach to water management - one which strengthens coordination between the local and national

levels and is geared towards increasing water supply, increasing the efficient use of water resources and improving flood protection. In this regard, the UNECE Guidance on Water Adaptation to Climate Change provides a useful reference framework for developing such an approach **(short/medium-term)**.

5.2 Develop a modern **flood risk assessment tool** to identify at-risk areas and priority actions for different scenarios. The tool should combine hydrological data with information on urban assets, including infrastructure and buildings, and vulnerable population groups, with a view to enabling City Hall experts to bring these different data streams together in the calculation of risk levels **(short/medium-term)**.

5.3 Use **nature-based solutions** (as part of the climate change adaptation and mitigation strategy), such as trees and green roofs, to increase water storage capacities and, thereof, reduce surface runoff and improve the sponginess of the city. A starting point would be to conduct a technical survey of public and residential buildings to identify suitability for green roofs and green facades **(short/medium-term)**.

5.4 **Uncover sealed streams and channels** to improve flood prevention and stormwater management **(medium-term)**.

6. Waste management

6.1 Launch an awareness-raising campaign on the benefits of waste separation, **reuse and recycling (short-term).**

6.2 **Create recycling collection** points in every neighbourhood of the city **(medium -term).**

6.3 Develop **waste-to-energy projects** to convert plastic waste into fuel **(medium-term)**.

7. Quality of construction, urban infrastructure and utility services

7.1 Further develop the national system of CABs engaged in fields of direct relevance to construction, urban infrastructure and utility services **(short /medium-term)**.

7.2 Assist national enterprises engaged in construction and urban infrastructure in implementing international and EU-harmonised standards **(short / medium-term)**.

7.3 Further develop market surveillance of residential and non-residential buildings and basic utility infrastructure to ensure continued compliance with regulatory requirements **(short/medium-term)**.

8. Monitoring and evaluation framework for strategic planning

8.1 The National Statistics Office of Georgia (GeoStat) needs to be supported in developing comprehensive socio-economic-environmental statistics, which disaggregates data by city and gender. An immediate step in this direction would be to collect data for measuring urban development against the KPIs for SSC **(short/medium-term)**.

8.2 Tbilisi could consider pooling efforts with GeoStat to establish a data collection system for measuring and monitoring the performance of enterprises operating in the city. The system should feature a special emphasis on tracking the progress of SMEs in achieving structural transformation towards increased specialization in knowledge-based circular activities with high value added. As Tbilisi is home to the largest segment of registered enterprises, this system can serve as a pilot for rolling out in the remaining cities **(short/medium-term)**.

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List of interviewees

Abashidze, Gogi . . . . City Institute Georgia
Basilaia, Andria . . . . Deputy-mayor of Tbilisi City Hall
Beka Javakhadze . . . . Ombudsman Office of Georgia
Bitadze, Maia . . . . . Chair, Environmental Protection and Natural Resources Committee, Parliament of Georgia
Chitishvili, Vakho . . . . Geographic Information System Specialist, CENN, Georgia
Chitadze, Giorgi . . . . Deputy Director, Georgian Accreditation Center
Gigashvili, Giga . . . . Head of the Environmental Protection Department, Tbilisi City Hall
Gventasadze, Nino . . . Head of Spatial Planning Department, Ministry of Regional Development and Infrastructure of Georgia
Herashvili, Erekle . . . Deputy Head of Transport and Logistics Development Policy Department, Ministry of Economy and Sustainable Development of Georgia
Janashia, Nana . . . . Executive Director, Caucasus Environmental NGO Network (CENN), Georgia
Janiashvili, Mariam . . . Social Justice Center
Kochladze, Manana . . . CEE Bankwatch
Lomjaria, Vakhtang . . . Head, Economic Development Department, Tbilisi City Hall
Menabde, Ioane . . . . Head, LEPL Spatial and Urban Development Agency, Georgia
Singru, Ramola . . . . Asian Development Bank
Papuashvili, Tea . . . . Asian Development Bank
Perucca, Fabienne . . . Cities Development Initiative for Asia
Tsintasbadze, Anano . . Open Society Foundations Georgia
Zazanashvili, Nano . . . Urban Research Center

Experts:

Tea Melikadze,
Keti Toidze,
Shota Dateshidze and
Sophiko Chikhradze . . . European Bank for Reconstruction and Development

European Union Delegation to Georgia:

Colombe de Mercey,
Andrej Bartosiewicz and
Irakli Khmaladze . . . . European Union

GIZ:

Martina Kolb and
Otar Nemsadze . . . . GIZ Georgia

International Relations and Project Department, Tbilisi City Hall:

Davit Jaiani and
Giorgi Maisuradze . . . Tbilisi City Hall

WHO Georgia:

Kakha Gvinianidze and
Silviu Domente . . . . World Health Organization Georgia

ANNEX 1 KEY LEGISLATION UNDERPINNING SPATIAL PLANNING AND URBAN DEVELOPMENT IN GEORGIA

- The "Code of Georgia on Spatial Planning, Architectural and Construction Activities" regulates spatial and urban planning as well as architectural and construction activities in the territory of Georgia. It sets out the: main principles, goals and tasks; hierarchy and composition of spatial planning and city-building plans and the rules of their development and approval; conditions for land use for construction purposes and the basic requirements for buildings; and the rules of administrative procedures related to the issuance of construction permits, construction supervision, and construction violations.
  The code applies a risk-based approach to regulating the issuance of construction permits for non-residential buildings and basic utility infrastructure. It divides non-residential buildings and structures into five classes (I, II, III, IV and V), with the high-class numbers assigned to buildings and structures posing threats to human health and safety and the environment. The higher the threats, the higher the class number assigned. Construction permits for buildings/structures belonging to classes II, III and IV are issued by local self-government bodies (in the case of Tbilisi, the Tbilisi City Hall). The law also regulates the issuance of

- Law No. 5153 of 3 June 2016 on the Improvement of Cadastral Data and the Procedure for Systematic and Sporadic Registration of Rights to Plots of Land within the Framework of the State Project.

- The Code on Safety and Free Movement of Products sets out the requirements for, among others, protecting human life, health and the environment; ensuring the safety of construction products; and ensuring compliance of construction activities with national technical regulations and legislative requirements as well as best practices in standardization, metrology, and accreditation.

- Law on Construction Activity defines the legal, organizational and economic aspects of construction activities.

- Law on Architectural Activity sets out the legislative basis for architectural activities with a view to consolidating an ecologically safe, aesthetic environment for the population.

- Presidential Decree No.660 of 24 November 2007 on Adoption of the Rule of Approval of Legalization of Unlawful and/or Illegal Constructions or Parts of Constructions by the Issuing Authority of the Construction Permit defines the decision-making process on unlawful and/or illegal construction and avenues for their legalization. The Rule also applies to incomplete individual residential houses dated no later than 1 January 2007 with a maximum space of 500 m2, if their arrangement is completed at the ground level.

- Government Decree No.57 of 24 March 2009 on Regulation of Permission for Construction and Permit Conditions.

- Government Decree No. 261 of 25 August 2010 on Approval of the Law for Establishing the Boundaries for the Land Plots of the Commonwealth of the Ownership Members.
- Government Decree No. 50 of 7 March 2013 on Access of Operation of the Technical Regulations of Foreign Countries in Georgia, Recognition of Documents, Accrediting Products without Conformity Assessment Procedures and Free Access of Foreign Products to Georgian Markets Assigned to Regulated Areas.
- Government Decree No. 51 7 of March 2013 sets requirements for imports from countries other than those covered under Government Decree No. 50.
- Government Decree No. 59 of 15 January 2014 on Use of Urban Areas and Main Provisions of Approval of Plant Regulation defines the rules of housing and planting on the whole territory of the country as well as determines the maximum heights and construction conditions of buildings.
- Government Decree No. 52 of 14 January 2014 on Validity of Operation and Recognition of Technical Regulations of Construction in Georgia ensures compliance with national regulatory requirements and obligations under international treaties.
- Government Decree No. 41 of 28 January 2016 on Approving Technical Regulations for the Safety Rules for Buildings regulates the planning, fire safety, provision of exit facilities and other requirements for the design, construction and use of buildings.
- Law No. 4849-III of 25 June 2019 on Determination of Designated Purpose of Land and Sustainable Management of Agricultural Land regulates agricultural land use.
- The Environmental Assessment Code of Georgia No. 890-IIS of 1 June 2017 defines manufacturing and construction activities that are subject to mandatory environmental impact assessment (EIA) as part of the permit issuance requirements, and other environmental legislation (including the laws on Environmental Protection; Ambient Air Protection; Radioactive Waste; Waste Management Code; Nuclear and Radiation Safety; Forest Code; and System of Protected Areas).

ANNEX 2 URBAN-RELATED POLICIES UNDER THE RESPONSIBILITY OF THE CENTRAL GOVERNMENT OF GEORGIA

- Country-wide spatial planning and urban development (other than those falling under local authorities) falls under the responsibility of the newly established Legal Entity of Public Law (LEPL) Spatial and Urban Development Agency (SUDA), created in June 2022 pursuant to recent amendments to the Law of Georgia "Code of Spatial Planning, Architectural and Construction Activities of Georgia". The Agency took over spatial planning from the Ministry of Regional Development and Infrastructure, including defining the Special Regulation Zones for the Government's consideration, issuing Development Regulation Plans (DRPs) and guiding local governments in issuing construction permits according to the DRPs. The creation of SUDA marks a new chapter in the country's reforms (see annex 1). With better funding opportunities and a strengthened capacity (from 13 to 44 persons), SUDA is focused on establishing a proactive approach to addressing current and future challenges to a more balanced and sustainable spatial planning and urban development, particularly those caused by climate change, population growth and rapid urbanization. Officials highlighted fostering synergies between spatial planning and urban development as a key element in such an approach as well as scaling up collaboration with regional and local level governments.

- Land Administration falls under the responsibility of LEPL National Agency of Public Registry (NAPR)[68] under the Ministry of Justice. Since August 2016, the Agency has been implementing a comprehensive land registration reform to improve tenure security, which saw the registration of over 1.3 million land parcels by the end of 2021. The Agency maintains an electronic cadastral system, which comprises: an online land register "TRACEDOC" which uses Blockchain technology; electronic cadastral surveying for producing interactive maps with 360-degree street images; and a cadastre of laws on land ownership. The Agency is focused on covering the territory of Georgia and digitalizing all cadastral surveys.[69]

- Environmental policy falls under the responsibility of the Ministry of Environmental Protection and Agriculture (MOEPA) which undertakes ex-ante and ex-post climate change impact assessments and coordinates the preparation and implementation of climate mitigation and adaptation strategies and action plans. In 2022, MOEPA was in the process of implementing its climate change strategy - Georgia's 2030 Climate Change Strategy and Action Plan for 2021-2023 - which aims at reducing greenhouse gas (GHG) emissions to at least 35 per cent below 1990 levels by 2030.[70] MOEPA, the Ministry responsible for issuing Environmental Impact Permits, launched an online portal in May 2022 for publishing EIAs as well as strategic environmental assessment (SEA) applications and decisions.[71] The launching of this portal, which is managed by LEPL National Environment Agency (NEA) under MOEPA, comes as part of a broader effort to bolster transparency and strengthen public-private consultations and

68 https://www.napr.gov.ge/.

69 More information in the 2021 annual report of NAPR (http://napr.gov.ge/about_the_agency).

70 For strategic documents on the 2030 Climate Change Strategy of Georgia, see https://mepa.gov.ge/En/PublicInformation/32027.

71 https://nea.gov.ge/En/GZSH-Applications.

is complemented by efforts to further improve the environmental and hydrometeorological monitoring system of Georgia. NEA is focused on developing a state-of-the-art system for collecting and disseminating environmental monitoring data and has recently launched an online air quality monitoring system to track progress in reducing air pollution.[72]

- Economic development, trade, transport, investment and energy fall under the responsibility of the Ministry of Economy and Sustainable Development (MOESD). The Ministry launched a 10-year development plan in 2021, "Georgia's Economic Development Long-term Vision – Economy 2030", which covers 12 major areas, ranging from small business empowerment, investment attraction, transport and logistics to specific development policies and quantitative indicators in each key area (Government of Georgia, 2021). MOESD also provides a range of enterprise support services to enable the structural transformation of the economy toward increased specialization in knowledge-based activities with high value added (see annex 3). MOESD is also focused on ensuring that at least 35 per cent of the country' total energy needs are supplied from renewable sources by 2030, as per the National Renewable Energy Action Plan (MOESD, 2021).

- Ensuring the quality of transport, basic utility services and buildings (residential and non-residential) falls within the competence of MOESD. The Ministry oversees the national system of technical regulations, standardization and conformity assessment, which provide the basis for not only ensuring the quality, safety, energy efficiency and climate resilience of urban infrastructure and buildings but also for unleashing innovation. This system has been undergoing extensive reforms as part of the Government's efforts to approximate national legislation to the EU *Acquis*. Below is a brief overview of reform achievements to date:

  - The technical regulations of Georgia are developed in line with international best practices.[73] As of 2022, Georgia has harmonised (i.e., transposed into national laws) over 50 per cent of the EU Regulations and Directives of direct relevance to urban development (see annex 4) and has adopted most of the European harmonised standards[74]. Together, the EU Directives and the European harmonised standards provide the legislative basis for ensuring consumer safety and environmental conservation across all sectors, including in the fields of construction and urban infrastructure (transport and utility services).[75]

  - Conformity assessment (which relates to determining whether products, ICT management systems and services fulfil the safety, quality and environmental conservation requirements and characteristics described in standards and technical specifications

72 The Air Quality Portal is available at https://www.air.gov.ge/en/.

73 Pursuant to the Agreement on Technical Barriers to Trade (TBT), technical regulations set out "product characteristics or their related processes and production methods, including the applicable administrative provisions, compliance with which is mandatory. These may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method". According to international best practices, only the essential regulatory requirements are spelled out, and these are limited to ensuring compliance with safety, health and environmental conservation concerns, and are provided in the text of the technical regulations, with standards referenced by number, title, scope, date or any combination of these. See annex 3 of the World Trade Organization Agreement on Technical Barriers to Trade, also referred to as the "Code of Good Practice" (https://www.wto.org/english/docs_e/legal_e/17-tbt.pdf).

74 A standard refers to a technical specification approved by a recognized national, regional or international standardization body and made available to the public for repeated or continuous application. Conformity with standards, which are developed by public or private entities, is voluntary. When a standard is referenced in legislation (as a basis for technical regulation), it becomes mandatory. For further details, see https://www.iso.org/sites/ConsumersStandards/1_standards.html.

75 https://single-market-economy.ec.europa.eu/single-market/european-standards/harmonised-standards_en.

referenced in technical regulations)[76] falls under the responsibility of conformity assessment bodies (CABs). These bodies comprise testing laboratories, product/service certification bodies and inspection bodies are accredited by LEPL Georgian Accreditation Centre (GAC)[77] and operate under MOESD. It is important to note that Georgia recognizes conformity assessment results and certificates accompanying imported construction material issued by accredited CABs in the EU and Member countries of the Organisation for Economic Co-Operation and Development.

- Market surveillance of industrial and construction products as well as pressure equipment placed on the market falls under the responsibility of LEPL Market Surveillance Agency, which operates under MOESD.
- Construction permits and market surveillance of buildings and structures intended for hosting nuclear power structures/stations, that is, Class V buildings and structures as explained in annex 1, fall under the responsibility of LEPL Technical and Construction Supervision Agency under MOESD.
- Metrology and standardisation fall under the responsibility of the LEPL Georgian National Agency for Standards and Metrology (GEOSTM), which undertakes applied and legal metrology as well as the adoption and registration of the standards in accordance with the Georgian law.

- Health care, labour, social security and the management of internally displaced persons (IDPs) fall under the responsibility of the Ministry of Internally Displaced Persons from the Occupied Territories, Labour, Health and Social Affairs.
- Trade facilitation, a critical element for ensuring the efficient flow of imports and reducing trade costs, falls under the responsibility of the Revenue Service which implemented over 93 per cent of the provisions of the World Trade Organization Agreement on Trade Facilitation before the agreement's entry into force.[78]
- Public-private partnerships are supported by the LEPL Public-Private Partnership Agency[79] established in February 2019 pursuant to the Law on Public Partnerships[80] and is accountable to the Prime Minister of Georgia.

76 For a detailed description of conformity assessments, see https://www.iec.ch/conformity-assessment/what-conformity-assessment.

77 GAC is a signatory to the European Cooperation for Accreditation Multilateral Recognition Arrangement and will be joining the International Laboratory Accreditation Cooperation Mutual Recognition Agreement (ILAC MRA) in the coming months. For information on how ILAC MRA works, see https://ilac.org/ilac-mra-and-signatories/.
For requirements for accreditation bodies, see https://www.iso.org/standard/67198.html.

78 The Agreement on Trade Facilitation entered into force on 22 February 2017 following its ratification by two-thirds of the World Trade Organization membership. The UNECE Study on Regulatory and Procedural Barriers to Trade in Georgia details the trade facilitation measures of Georgia (https://www.unece.org/fileadmin/DAM/trade/Publications/ECE_TRADE_443E_Georgia.pdf).

79 https://ppp.gov.ge/en/.

80 The law was adopted on 4 May 2018 (https://ppp.gov.ge/app/uploads/2020/04/ppp-law-ENG.pdf).

ANNEX 3 NATIONAL ENTERPRISE SUPPORT INSTITUTIONS

Enterprise Georgia[81]

Market access

- Planning, organizing and co-financing participation in relevant international tradeshows and conferences
- Planning, organizing and co-financing international targeted trade missions
- Export Catalogue
- Enterprise Europe Network (EEN)
- Online trade platform (tradewithgeorgia.com)
- Connect foreign buyers with Georgian producers.

Advice and matchmaking

- Export readiness test to rank companies according to their needs
- One-on-one coaching sessions with companies interested in expanding export activities
- Training opportunities for managers of export-oriented enterprises operating in the country
- Advice to enterprises, especially SMEs, on export-related issues, including tariff levels in target markets.

Access to finance

- Co-financing and leasing programmes
- Hotel industry incentive scheme
- Film industry incentive scheme.

Micro and small business support – Matching grants and advisory services.

FDI attraction / promotion and after-care

- Providing general and sector specific information to potential investors
- Connecting investors with Government bodies and potential local partners
- Organizing exploratory visits for potential investors
- Supporting reinvestment activities.

Research – Sector-focused research to gain insights into the development challenges facing the enterprises; identify export potential; and ascertain investment potential to attract foreign direct investment.

Georgia's Innovation and Technology Agency[82]

- Coordination among research and development (R&D) scientists and firms
- Support start-ups through developmental guidance
- Facilitate cooperation among administrative officials and firms
- Skills development, especially in digital literacy and capacity building
- Engages in SME development through innovation guidance and technological solutions
- Assists firms in the financing of knowledge-based initiatives
- Implements programmes for stimulation of R&D initiatives and firms.

81 http://enterprisegeorgia.gov.ge.

82 https://gita.gov.ge/eng/static/31/genie.

ANNEX 4 ADOPTION OF THE EUROPEAN UNION DIRECTIVES AND REGULATIONS FOR NON-FOOD SECTORS: GEORGIA

(As of 30 June 2022)

EU Directives and Regulations		Status	Date	National legislation
1	Council Directive 92/42/EEC of 21 May 1992 on "Efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels"	Fully transposed	2013	Government Decree N0. 149 of 17 June 2013 on "Technical Regulation on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels"
2	Regulation (EU) 2016/424 of the European Parliament and of the Council of 9 March 2016 on cableway installations and repealing Directive 2000/9/EC	Fully transposed	2019	Government Decree No. 320 of 15 August 2011 on "Technical Regulation relating to cableway installations designed to carry persons" (amended)
3	Directive 2014/33/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to lifts and safety components for lifts (recast)	Fully transposed	2019	Government Decree No. 289 of 26 July 2011 on "Technical regulation relating to safety of lift" (amended)
4	Directive 2014/68/EU of the European Parliament and of the Council of 15 May 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment (recast)	Fully transposed	2019	Government Decree No. 151 of 19 June 2013 on "Technical Regulation concerning pressure equipment" (amended)
5	Directive 2014/29/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of simple pressure vessels (recast)	Fully transposed	2019	Government Decree N0. 150 of 19 June 2013 on "Technical Regulation relating to simple pressure vessels" (amended)
6	Directive 2013/53/EU of the European Parliament and of the Council of 20 November 2013 on recreational craft and personal watercraft and repealing Directive 94/25/EC	Fully transposed	2019	Government Decree No. 452 of 31 December 2013 on "Technical Regulation relating to recreational craft" (amended)
7	Commission Directive 2008/43/EC of 4 April 2008 setting up, pursuant to Council Directive 93/15/EEC, a system for the identification and traceability of explosives for civil uses	In process	–	Draft technical regulation is prepared

EU Directives and Regulations		Status	Date	National legislation
8	Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast)	Fully transposed	2019	Government Decree No. 83 of 6 February 2020 on "Adopting Technical regulation on the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres"
9	Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC	In process	–	Draft technical regulation is being developed
10	Regulation (EU) 2016/426 of the European Parliament and of the Council of 9 March 2016 on appliances burning gaseous fuels and repealing Directive 2009/142/EC	Fully transposed	2019	Government Decree N0. 84 of 6 February 2020 on "Adopting Technical Regulation on Appliances Burning Gaseous Fuels"
11	Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC	Fully transposed	2019	Government Decree No. 82 of 6 February 2020 on "Adopting Technical regulation on Personal Protective Equipment"
12	Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast)	Fully transposed	2019	Government Decree No. 85 of 6 February 2020 on "Adopting Technical Regulation on Machinery"
13	Directive 2009/48/EC of the European Parliament and of the Council of 18 June 2009 on the safety of toys	Fully transposed	2019	Government Decree No. 47 of 20 January 2020 on "Adopting Technical Regulation on the Safety of Toys"
14	Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility	In process	–	Draft technical regulation is being developed
15	Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits (recast)	In process	–	Draft technical regulation is being developed
16	Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No. 178/2002 and Regulation (EC) No. 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC	In process	–	Draft technical regulation is being developed

EU Directives and Regulations		Status	Date	National legislation
17	Regulation (EU) 2017/746 of the European Parliament and of the Council of 5 April 2017 on in vitro diagnostic medical devices and repealing Directive 98/79/EC and Commission Decision 2010/227/EU	In process	–	Draft technical regulation is being developed
18	Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonized conditions for the marketing of construction products and repealing Council Directive 89/106/EEC	Partially transposed	–	Government Decree No. 476 of 1 October 2018 adopting the Technical Regulation on "Construction Products" (covering 4 construction products)
19	Directive 2014/31/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of non-automatic weighing instruments (recast)	In process	–	Draft technical regulation is being developed
20	Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (recast)	In process	–	Draft technical regulation is being developed

ANNEX 5 UNREPORTED KEY PERFORMANCE INDICATORS FOR SMART SUSTAINABLE CITIES

Economy dimension

- Draining/Storm Water System ICT Monitoring
- Traffic Monitoring
- Open Data
- R&D Expenditure
- Patents
- Tourism Sector Employment
- ICT Sector Employment
- Wastewater Collection
- Solid Waste Collection
- Access to Electricity
- Public Transport Network Convenience
- Transportation Mode Share
- Shared Bicycles
- Shared Vehicles
- Public Building Sustainability
- Integrated Building Management Systems in Public Buildings
- Pedestrian Infrastructure
- Strategic City Planning Documents – Urban Development and Spatial Planning

Environment dimension

- Air Pollution
- Greenhouse Gas (GHG) Emissions
- Percentage of Households Covered by an Audited Water Safety Plan
- Freshwater Consumption
- Wastewater Treatment
- Solid Waste Treatment
- EMF Exposure
- Noise Exposure
- Green Area Accessibility
- Protected Natural Areas
- Recreational Facilities
- Renewable Energy Consumption
- Residential Thermal Energy Consumption

Society and Culture dimension

- Student ICT Access
- Adult Literacy
- Electronic Health Records
- Physicians
- Health Insurance/Public Health Coverage
- Cultural Infrastructure
- Informal Settlements
- Gini Coefficient
- Natural Disaster Related Deaths
- Disaster Related Economic Losses
- Resilience Plans
- Population Living in Disaster Prone Areas
- Emergency Services Response Time
- Violent Crime Rate
- Local Food Production

ANNEX 6 LOCKDOWN AND SOCIAL-DISTANCING MEASURES IMPOSED BY THE GOVERNMENT OF GEORGIA

Emergency lockdown	Description
• Limiting entry into Georgia • Movement restrictions within the country to curb the spread of the virus from highly affected regions	Declared from 21 March to 22 May 2020 pursuant to the *Presidential Special Ordinance No. 1 of 21 March 2020 on the Declaration of a State of Emergency*. In addition to social distancing measures, the state of emergency involved restricting entry into the country: all flights except for repatriation flights for Georgian citizens organized by the Government were cancelled and travellers from highly affected countries were subjected to self-quarantine; additional checkpoints were erected in Tbilisi and other major cities to screen individuals and enforce movement restrictions; a ban on the movement of all private vehicles was established until 27 April 2020; and nationwide overnight curfew was imposed from 9 p.m. to 6 a.m.
Social distancing	**Description**
• School closures 23 March –01 September 2020	Schools, universities and vocational training institutions were placed on lockdown pursuant to *Government Decree No. 181 of 23 March 2020 on Approval of Implementing Measures to Avoid Spreading of COVID-19*. The decree was elaborated for the purpose of implementing the Presidential Special Ordinance.
• Limitation to public gatherings 23 March-21 April 2020	Public gatherings consisting of more than three persons were prohibited. Exceptions were hospitals, police offices and enterprises that were authorized to operate. Pursuant to *Government Decree No. 181 of 23 March 2020*.
• Closure of non-essential production 23 March-21 April 2020	All enterprises were placed on lockdown except for those engaged in the production of steel products, construction materials, food and feed distribution, medical equipment and medicines and mining companies. Pursuant to *Government Decree No. 181 of 23 March 2020*.
• Closure of non-essential services and retail trade 23 March-21 September 2020	Based on *article 7 of Government Decree No. 181*, the country allowed the following services and trade to remain operational: food shops, clinics and medical centres, banks, pharmacies, taxis, food and feed distribution, press kiosks, accredited laboratories providing safety analysis for food and feed, disinfection services, legal services and delivery services.
• Legal framework for prevention of future outbreak of COVID-19 12 June 2020 (ongoing)	As per the amended *Administrative Offenses Code*, face masks are compulsory in public places and public transport. Penalties for non-compliance amount to a fine of GEL 20 (approx. USD 6) for individuals and GEL 500 (approx. USD 165) for legal entities.

Source: Government of Georgia in UNECE (2020).

Note: For a detailed overview of these measures, see the report by the Government of Georgia (https://stopcov.ge/Content/files/COVID_RESPONSE_REPORT__ENG.pdf).

ANNEX 7 MAIN RELIEF AND SUPPORT MEASURES BY THE GOVERNMENT OF GEORGIA, 2020

Measures	Description
• Co-financing Mechanism for Small, Medium and Family Hotel Industry for supporting family-owned hotels 01 March 2020 - 01 March 2021	Targets hotels with 4 to 50 rooms (over 2,000 hotels). Provides co-financing of bank loans (80 per cent for loans in GEL and 70 per cent for loans in foreign currency, with co-financing in the amount of GEL 5 million). Eligibility criteria: loan amount should not exceed GEL 1 million (USD 320,000 or EUR 280,000)[83] and it must be provided before 01 March 2020.
• Tax payment deferrals 01 March-31 October 2020	Deferral of property and income taxes for enterprises engaged in the tourism industry (e.g. hotels and restaurants, travel agencies, transportation companies, and organizers of cultural and sports events).
• Tax payment deferrals for vehicle importers 01 April-01 September 2020	90-day deferral until 1 September 2020
• Insurance against price spikes	Insures construction enterprises in infrastructure development projects against price spikes.
• Value-added tax (VAT) refunds	Doubling of VAT refunds: GEL 1.2 million (USD 386,000) instead of GEL 600 million (USD 193 million).
• Suspension of tax payments for a limited period 01 April-30 September 2020	State subsidies for every retained job: salaries up to GEL 750 (USD 241) fully exempted from income tax; salaries up to GEL 1,500 (USD 482) exempted from income tax.
• Temporary suspension of tax payments 01 April-30 September 2020	VAT exemptions for imports of medical goods
• Guidelines/explanatory brochures for enabling enterprises to adapt to the new business conditions	*Government Order No. 01-149/o of 4 April 2020* provides detailed recommendations for enterprises across all sectors.
• Direct cash injections for the informal sector and self-employed	One-time cash injection in the amount of GEL 300 (USD 96).
• Ensure liquidity for the financial sector	GEL 600 million (USD 193 million) cash injection for commercial banks.
• Credit guarantee scheme for businesses	A comprehensive scheme in the amount of GEL 2 billion (USD 643 million) for co-financing interest rates on bank loans taken out by the enterprises: up to 90 per cent guarantees on new loans and up to 30 per cent on loan restructuring. Co-financing conditions were revised to allow for: 1) increasing the period of co-financing of loans/leasing from 24 months to 36 months; 2) lowering the minimum threshold for loans/leasing; 3) increasing loans using movable assets; 4) expanding the scope of sectors benefiting from co-financing; and 5) increasing the maximum loan amount from GEL 5 million (USD 1.6 million) to GEL 10 million (USD 3.2 million).

83 Approximate values using the 2020 average exchange rates: USD/GEL = 3.1097 and EUR/GEL = 3.5519 (https://www.geostat.ge/en/modules/categories/92/monetary-statistics).

Measures	Description
• Caring for villages, agriculture, regional development	Grants in the amount of up to GEL 30,000 (USD 9,647).
• Caring for villages, agriculture, regional development	Agri-credit (financing annual crops)
• Caring for villages, agriculture, regional development	Support for melioration activities: full exemption from melioration fees for 2020 and writing off debts in previous years.
• Pandemic Unemployment Payment 01 April-30 September 2020	Financial assistance for employees who have lost their jobs or were put on unpaid leave - GEL 1,200 (USD 386) in overall assistance for a period of six months – GEL 200 (USD 64) per month -.
• Social Programme - Delay the loan service payments for individual customers 01 April-30 September 2020	Banks expressed readiness to restructure loans.
• Social Programme - Utility payments 01 March-31 May 2020	Utility payments (gas and electricity).
• Social Programme - Pre-payment of pension Launched on 25 March 2020	Advance payment of pensions.

Source: UNECE, 2020.

Note: For further details, see the COVID response report of Georgia (https://stopcov.ge/Content/files/COVID_RESPONSE_REPORT__ENG.pdf).

ANNEX 8 CONFORMITY ASSESSMENT BODIES: GEORGIA

Field	No. of conformity assessment bodies	Sector
Inspection	120	Construction, vehicle inspection, hazardous objects, energy and ICT.
Personnel Certification Body	8	Property evaluation, energy, industry, electricity, fare safety, vehicle inspection.
Product Certification	6	Mineral and natural waters, alcoholic and non-alcoholic beverages, construction materials, poultry products
Testing Laboratory	123	Food, feed, drinks and beverages, chemistry, construction products, oil and oil products, biosafety, water, milk and milk products, atmospheric air, packaging materials, metal and alloys, etc.
Calibration Laboratory	5	Mass units, electricity units, flow units, temperature, legal measurements (gas metres, electricity metres, water metres etc).
Proficiency testing	2	Medical fields, construction materials
Management System's certification	0	N/A
Medical Laboratory	7	Biochemistry, clinical immunology, cytology etc.

Source: GAC.

Smart Sustainable Cities Profile
Tbilisi, Georgia

Tbilisi is the largest city in Georgia and its capital. It is the centre of the country's economic, political, social and cultural life with an ambitious vision to become one of the leading smart sustainable cities in the region of the United Nations Economic Commission for Europe (UNECE).

While the city is strategically located along major international trade routes, its complex topography poses challenges. Tbilisi is surrounded by mountains on three sides and the Mtkvari River that crosses the city from northwest to southeast divides it into two distinct elevation areas causing varying levels of exposure to sea-level rise. Being a coastal city makes it vulnerable to floods.

The COVID-19 pandemic hit the country's economy hard. Nationwide lockdowns sealed off Tbilisi and other major cities causing severe supply chain disruptions that inflated transport costs and isolated enterprises from global supply. Compared with the 2008 global financial crisis, the economic fallout was even worse despite the Government's sweeping relief schemes. The economy rebounded in 2021 but it is still suffering from the lingering effects of the pandemic. Tbilisi remains the driving force of the country's economic growth. However, economic recovery remains fragile in view of the war in Ukraine.

Tbilisi has been experiencing rapid urbanization due to its rising income levels and noticeable improvements in urban structure and utility services. Urban development proceeded with a lack of environmental planning and a coherent approach to housing resulting in unplanned urban sprawl, substandard and unaffordable housing, traffic congestion, air and sound pollution, unfriendly urban design and a lack of green open spaces.

The Smart Sustainable City Profile of Tbilisi (Tbilisi City Profile) aims to showcase the progress of the city of Tbilisi in its transition to becoming a smart, sustainable city in the context of SDG 11 and other urban-related Sustainable Development Goals. "Smart Sustainable Cities" profiles provide an evaluation of city performance against a number of thematically categorized Key Performance Indicators supplemented by a literature review and consultation with local experts. Through substantive analysis of data provided by Tbilisi City Hall, the Tbilisi City Profile delivers a comprehensive set of policy recommendations aimed at upscaling efforts in the area of urban policy and governance framework; construction and urban infrastructure; and local monitoring and evaluation framework for strategic planning. The overall aim of the Tbilisi City Profile is to assist Tbilisi in realizing its ambitious vision of becoming one of the leading smart sustainable cities in the UNECE region.

Find out more about the UNECE Housing and Land Management Unit at: www.unece.org/housing.

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