



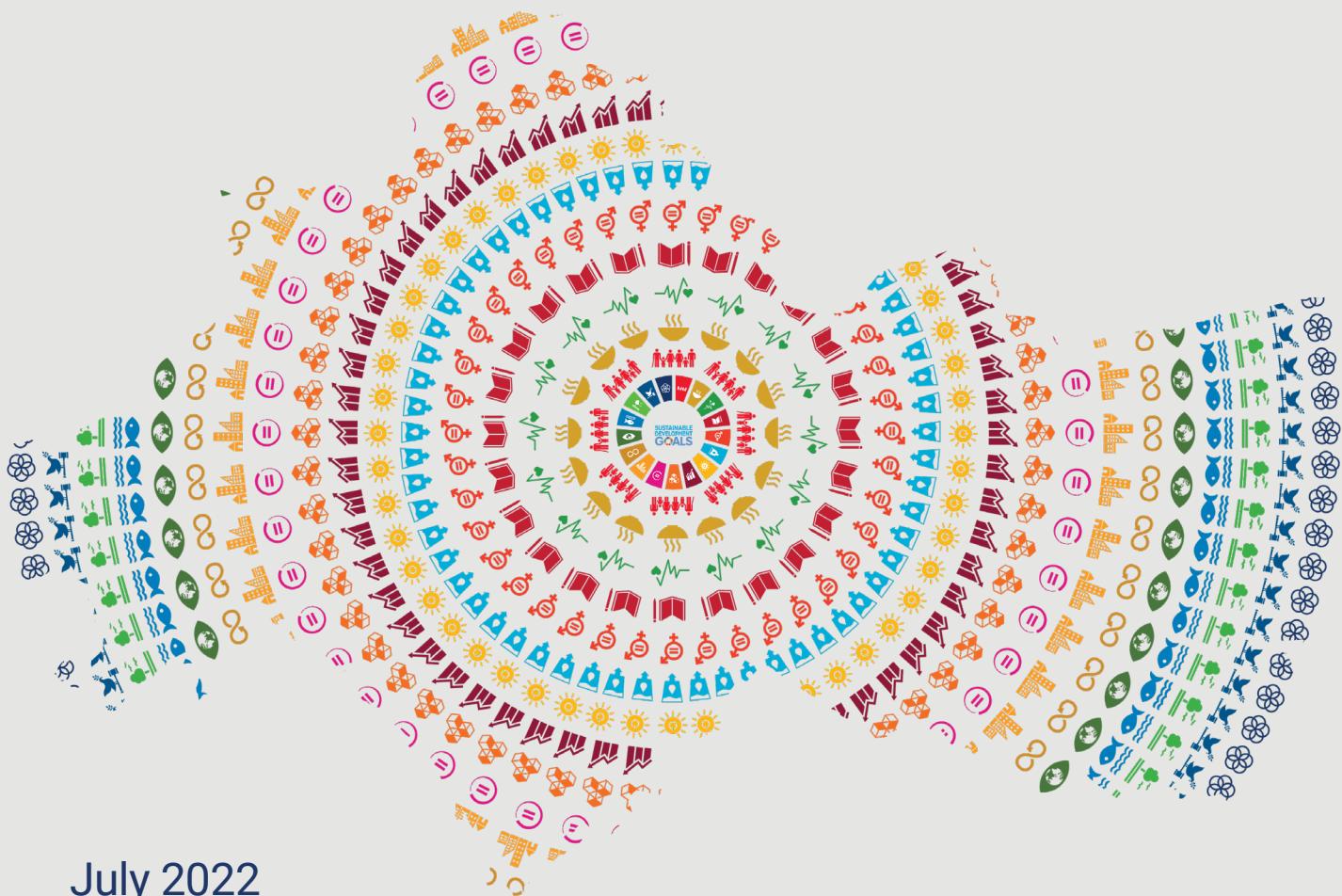
Greater
Amman
Municipality

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Voluntary Local Review

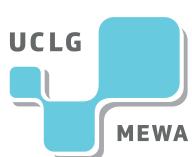
The City of Amman, Jordan

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July 2022

UN HABITAT
FOR A BETTER URBAN FUTURE



Shared Prosperity Dignified Life





SUSTAINABLE DEVELOPMENT GOALS

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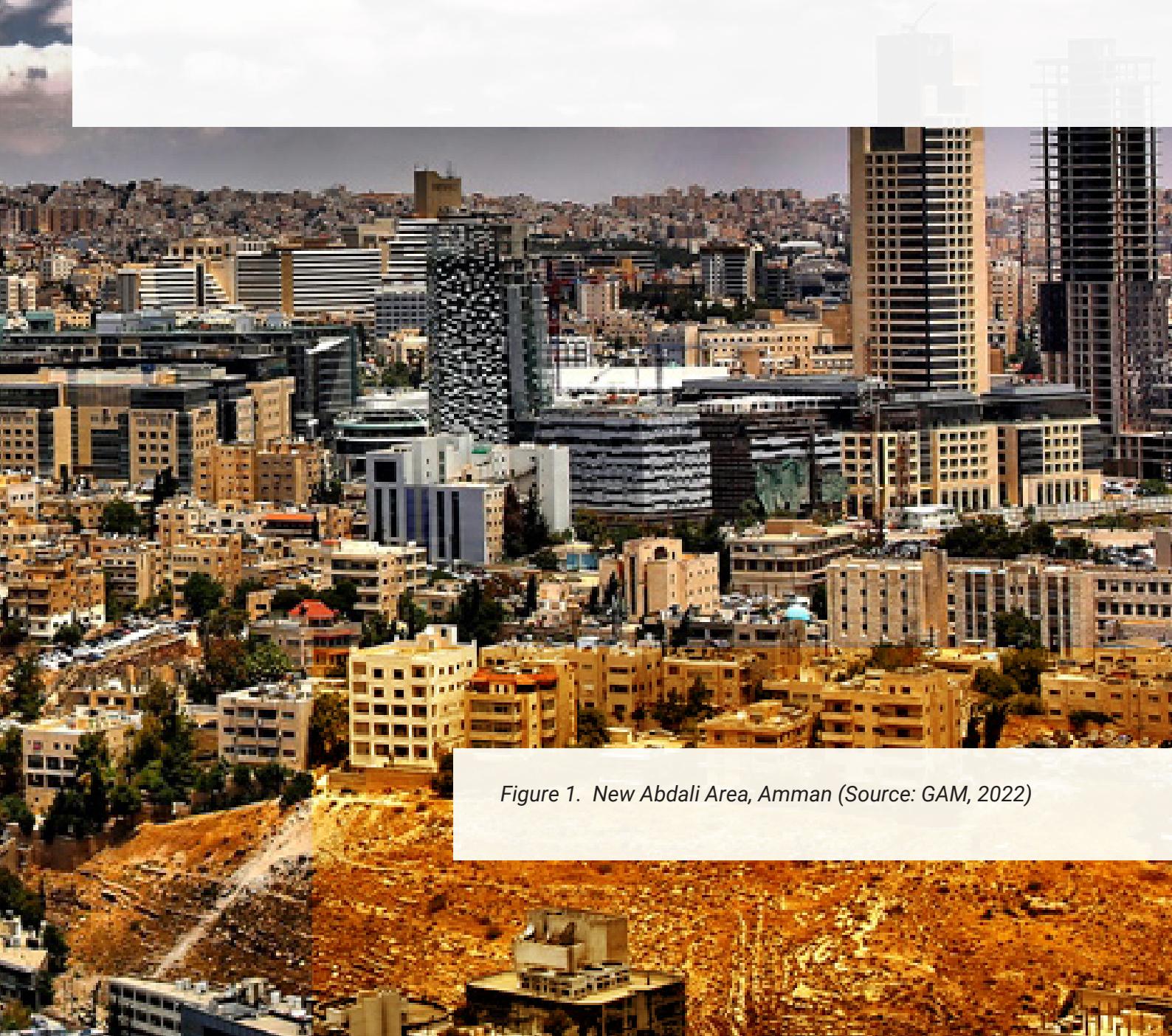


Figure 1. New Abdali Area, Amman (Source: GAM, 2022)

PREFACE



At the United Nations Sustainable Development Summit at the General Assembly in New York in 2015, Jordan, together with 192 other countries, adopted the 2030 Agenda for Sustainable Development with its 17 Sustainable Development Goals (SDGs). By adopting the SDGs, the international community pledged to address emerging issues and challenges in developing countries, improve living conditions in developed countries through enhancements to housing and the urban environment, monitor the progress towards the Goals and their 169 targets using a set of global indicators, and report on progress towards the SDGs through Voluntary National Reviews (VNRs).

In light of the 2030 Agenda, and of the New Urban Agenda adopted at the Habitat III conference in 2016, it is clear that cities have a critical role to play in delivering sustainable development through SDG localization, measuring, and monitoring. As a result, 65% of the 169 SDG targets could not be achieved without the involvement of local governments. This recognition permeates policy and practice in Amman, the capital of Jordan, which has over 4 million residents (36% of the national population), is a main industrial centre, and is home to international development and cooperation agencies. In Jordan, 44.3% of the national population is under 18 years of age.¹

Over the past decade, Amman has invested in improving the quality of life, in green growth benefiting from the city's rapid expansion and industrialization, and in addressing climate change with the support of an array of international partners, including the United Nations Economic Commission for Western Asia (UNESCWA), the United Nations Human Settlements Programme (UN-Habitat), UCLG (United Cities and Local Governments), the European Bank for Reconstruction and Development (EBRD), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the United Nations Development Programme (UNDP), and many others.

The year 2022 marks a milestone in Amman's commitment to the 2030 Agenda's Goals and values, with the development of the first Voluntary Local Review (VLR) in parallel with the second VNR by the government of Jordan. VLRs outline cities' progress toward the SDGs and have the potential to become powerful accelerators of SDG localization worldwide, coupled with an enhanced political commitment to the 2030 Agenda, civic engagement, and participatory planning, while fostering partnerships for the Goals. Recently, in light of the COVID-19 pandemic, the VLRs have conveyed the message of post-COVID recovery, resetting development priorities towards meeting the needs of local communities, SDG-enhanced business activities, and ensuring that no one is left behind.

Reflecting on Amman's history and its socio-political and administrative context, this VLR demonstrates that the city is uniquely positioned to attract and retain financial and human resources (most notably through development aid), knowledge and expertise. Thanks to the determination of the Greater Amman Municipality (GAM) administration, it has become a testing ground for innovative urban infrastructure and services projects in the Arab region today. The VLR explains that, in the years to come, Amman will focus on removing bottlenecks in order to accelerate progress toward the SDGs. It will mainstream the SDGs into policies and strategies, programmes and partnerships, and municipal operations, covering energy, building, housing and transport. Amman will also enhance policy coordination, develop and test new approaches to participatory planning and deliver innovative, climate-resilient urban infrastructure to achieve the SDGs, improve the quality of life, and create an enabling investment environment in the city.

1 Department of Statistics, (2020).

MESSAGE FROM THE MAYOR



Figure 2. Mayor of Amman, Dr. Yousef Al Shawarbeh (Source: GAM, 2022)

Amman (or Philadelphia), known as the city of brotherly love, and with a history stretching back thousands of years, is proud to be a continuously evolving city, putting the people and residents of the city at the heart of its plans, strategies and services.

Amman, under the guidance of His Majesty King Abdullah II, has joined other global cities around the world that are working to localize and streamline the SDGs into their strategies and plans. Amman has been working towards this end for over a decade, aligning all its projects and programmes with the SDGs to ensure that the local agenda is properly interlinked with the national agenda of Jordan, and the 2030 Agenda for Sustainable Development.

I am therefore proud to be introducing the first Voluntary Local Review (VLR) of the city of Amman, in which the performance of the city is reviewed against selected SDGs from the 2030 Agenda in an evidence-based and actionable approach. The report also identifies the gaps and barriers that limit Amman's capacity to be a liveable and attractive city, and it highlights the opportunities to tackle those challenges. This is of utmost importance to me and to my colleagues in the city council and all the management and employees of Greater Amman Municipality, who are working to achieve the vision of Amman as a smart, modern, sustainable and resilient city. This will also improve the cooperation with other stakeholders, including national authorities and UN and international organizations, who have been providing huge support to the city to allow its plans and strategies to be realized.

This is a moment of pride, both in submitting the first VLR of Amman and the first VLR in the Arab region, and to do so simultaneously with the second VNR of Jordan. This ensures streamlining and complementarity between plans at the local and national levels, but also shows commitment to the global agenda at all levels. By applying the guidelines of the 2030 Agenda and the New Urban Agenda, we will be working towards an inclusive city, leaving no one behind and ensuring that all neighbourhoods and communities in Amman have equal access to services and are considered in the planning process, and also in the expected benefits from living in the city.

Being the first city in the Arab region to present its VLR also brings huge responsibility, as we need to ensure that Amman presents a successful model that can be followed and replicated by other cities in the region to accelerate the efforts toward sustainable development. There is a long way to go, but we have taken the first steps on the road and are committed to continue to serve.

We hope that Amman will inspire continued efforts towards locally and globally sustainable solutions that further contribute to collective efforts to achieve a more sustainable world by 2030 and beyond.



Mayor of Amman
Dr. Yousef Al Shawarbeh

MESSAGE FROM UNESCWA, UN-HABITAT, AND UCLG-MEWA



Message: United Nations Economic and Social Commission for Western Asia, United Nations Human Settlement Programme and United Cities and Local Governments – Middle East and West Asia Section

The United Nations Economic and Social Commission for Western Asia (UNESCWA), the United Nations Human Settlement Programme (UN-Habitat) and the United Cities and Local Governments Middle East and West Asia Section (UCLG-MEWA) have closely collaborated with the Greater Amman Municipality (GAM) to develop the first voluntary local review (VLR) of the city of Amman, which is the first in Jordan and the Arab Region as a whole.

Arab countries have been exerting notable efforts to achieve the Sustainable Development Goals (SDGs) and report on related progress through Voluntary National Reviews (VNRs). To date, Jordan has prepared two VNRs, one in 2017 and the second to be submitted in July 2022. However, reporting on SDG implementation at the national level, although central to achieving sustainable development, is not sufficient on its own. Sustainable development demands the active involvement of cities.

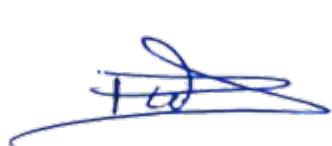
Since 2016, cities around the world have been localizing and measuring progress towards the SDGs, notably through VLRs, and this momentum has accelerated given the need to reinforce the COVID-19 recovery. Amman pioneered the VLR process in the Arab region making it evidence-based, inclusive, participatory and actionable, including over 60 stakeholders representing government, civil society, academia, local communities and others.

Prepared in parallel with the second Jordanian VNR, the report is an opportunity to reinforce local-national policy coherence for sustainable development. It addresses a subset of the SDGs that were selected based on their relevance to the city's mandate and strategic objectives and the access to and availability of high-quality urban data. The review highlights the city's efforts to mainstream the SDGs while improving the quality of life of citizens and making the city smarter and more resilient to potential shocks and the impacts of climate change.

For the first time ever, the 2022 High-level Political Forum (HLPF) will include the presentation of both the VNR and VLR, emphasizing the importance of working simultaneously at the national and city levels to effectively address development challenges. Jordan will therefore once again be the global pioneer in reinforcing the dialogue on local-national development.

Amman faces numerous challenges that constrain the city's green growth, including urban sprawl, the imbalance between housing demand and supply, the lack of inclusive, safe and green public spaces, rising spatial and social inequalities, environmental degradation and pollution. Nevertheless, Amman is leading the country in developing a comprehensive public transport system and has implemented a range of climate mitigation and adaptation measures and invested in renewable energy. The city has attracted international investments and has grown into a centre for international cooperation and innovation that is determined to leave no one and no place behind.

The Amman VLR is expected to inform future operational frameworks between the Greater Amman Municipality, the Government of Jordan, the United Nations, the wider development community and other stakeholders, to move towards an increasingly sustainable urban future for all in the country.



Rola Dashti

Under-Secretary-General
Executive Secretary
UNESCWA



Erfan Ali

Regional Representative for
Arab States
UN-Habitat



Mehmet Duman

Secretary-General
UCLG MEWA

ACKNOWLEDGEMENTS

The development of this Voluntary Local Review was led by UNESCWA, UN-Habitat and the United Cities and Local Governments – Middle East and West Asia Section (UCLG-MEWA), in close collaboration with GAM.

The preparation of this VLR was led by Ms. Agata Krause following Mr. Luis Herrera-Favela, and overseen by ESCWA's Sustainable Urban Development Lead, Ms. Sukaina Al-Nasrawi, within the cluster on Gender Justice, Population, and Inclusive Development led by Ms. Mehrinaz El Awady; as well as UN-Habitat Jordan's National Programme Coordinator Ms. Deema Abu Thiab, and UN-Habitat Programme Officer, Ms. Nagwa Lachine within the UN-Habitat Regional Office for Arab States led by Mr. Erfan Ali. Contributions to the VLR chapters were made by (in alphabetical order): Mr. Hamza Al Kakoun, Ms. Nisreen Alaraj, Ms. Gina Marie Enriquez, Mr. Adnan Hassoun, Ms. Jenna Helal, Mr. Luis Herrera-Favela, Ms. Anna Koledova, and Ms. Agata Krause.

In GAM, the effort was coordinated by an internal committee, comprising representatives of the different sectors and departments of the municipality, which was coordinated by Mr. Naser Qandeel and Ms. Ilham Alnawawi and chaired by Mr. Akram Khraisat from the Amman Urban Observatory. Technical inputs for the VLR chapters were provided by various stakeholders from the public sector, civil society, NGOs, academia, international organizations, and UN agencies, including but not limited to the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women), the World Health Organization (WHO), the United Nations Industrial Development Organization (UNIDO), UNDP, UN-Habitat, the United Nations High Commissioner for Refugees (UNHCR), the Joint United Nations Programme on HIV/AIDS (UNAIDS), UCLG-MEWA, the UN Resident Coordinator Office in Jordan, the Ministry of Planning and International Cooperation, the Ministry of Local Administration, the Ministry of Environment, the Ministry of Health, the Ministry of Education, the Ministry of Industry and Trade, the Ministry of Social Development, the Ministry of Labor, the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF), the Department of Statistics (DoS), the Public Security Department (PSD), the Jordan National Commission for Women (JNCW), Friedrich-Ebert-Stiftung, the University of Jordan, German Jordanian University, the Royal Scientific Society, the Jordan Green Building Council, and many others.

The final draft of this VLR was reviewed by GAM, UNESCWA, UN-Habitat, UCLG-MEWA, the UN Resident Coordinator Office in Jordan, UN Women, UNDP, the Jordanian National Commission for Women, UNDP İstanbul International Center for Private Sector in Development (UNDP IICPSD), Karatay Municipality (Konya, Türkiye), and Sultanbeyli Municipality (İstanbul, Türkiye).

The VLR team would like to express its gratitude to the Mayor of Amman, Dr. Yousef Al Shawarbeh, and the City Manager, Mr. Ahmad Malkawi, for their guidance and commitment to developing the first VLR in the Arab region.



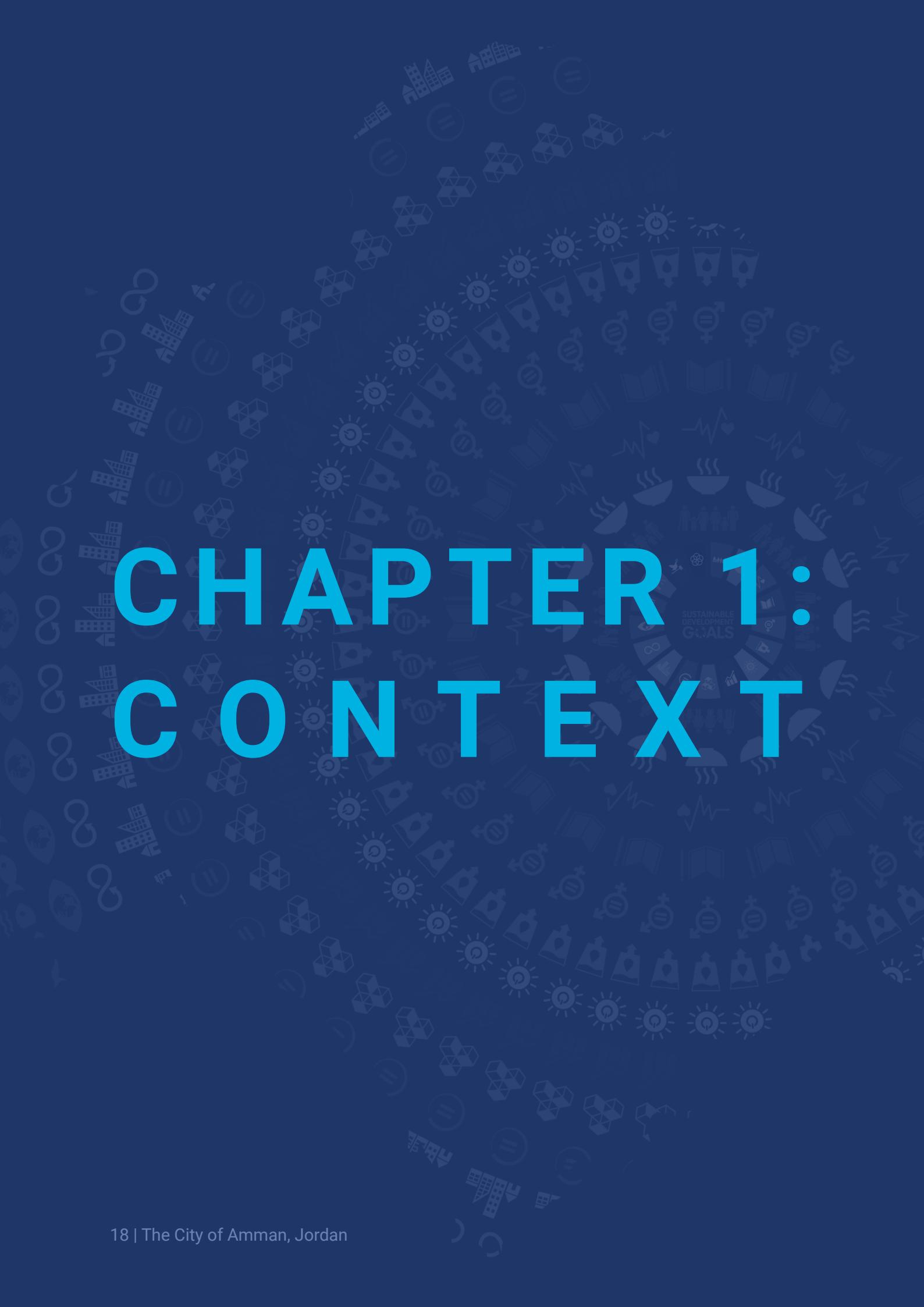
ABBREVIATIONS AND ACRONYMS

AFD	Agence Française de Développement
AUO	Amman Urban Observatory
BCE	Before the Common Era
BMZ	German Federal Ministry of Economic Cooperation and Development
BRT	Bus Rapid Transit
C40	C40 Cities Climate Leadership Group
DLS	Department of Land and Survey
DoS	Department of Statistics
EBRD	European Bank for Reconstruction and Development
GAM	Greater Amman Municipality
GCAP	Green City Action Plan
GCMCE	Global Covenant of Mayors for Climate & Energy
GDP	Gross Domestic Product
GEI	Global Entrepreneurship Index
GHG	Greenhouse Gas
GI	Green Infrastructure
GIEP	Government's Indicative Executive Programme 2021-2024
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GUO	Global Urban Observatory
Habitat III	United Nations Conference on Housing and Sustainable Urban Development
HLPF	High-level Political Forum on Sustainable Development
HUDC	Housing and Urban Development Corporation
ICMPD	International Center for Migration Policy Development
ICT	Information and Communications Technology
ICU	Intensive Care Unit
IFC	International Finance Corporation
ILCA	Improving Living Conditions in Disadvantaged Areas in Amman
ILO	International Labour Organization
ILP	Industrial Lands Policy
INDC	Intended Nationally Determined Contributions
ISO	International Organization for Standardization
ISTD	Income and Sales Tax Department
JD	Jordanian dinar
JEPCO	Jordan Electric Power Company
JFDA	Jordan Food and Drug Administration
JNBC	Jordan National Building Council
JREEEF	Jordan Renewable Energy and Energy Efficiency Fund
JUH	Jordan University Hospital

kWh	kilowatt hours
LEED	Leadership in Energy and Environment Design
LRD	Land Registration Directorate
MBT	Mechanical biological treatment
MENA	Middle East and North Africa
MoDEE	Ministry of Digital Economy and Entrepreneurship
MoH	Ministry of Health
MoLA	Ministry of Local Administration
MoPIC	Ministry of Planning and International Cooperation
MoU	Memorandum of Understanding
MW	Megawatt
MWh	Megawatt hour
NAFES	National Fund for Enterprise Support
NDC	Nationally Determined Contribution
NEEAP	National Energy Efficiency Action Plan
NEPCO	National Electrical Power Company
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
PM10	Particulate Matter with a diameter of 10 microns or less
ppb	Parts per billion
PPP	Public-private partnership
PrEP	Pre-exposure prophylaxis
PSD	Public Security Directorate
PV	Photovoltaic
QAIA	Queen Alia International Airport
REEEL	Renewable Energy and Efficiency Law
RMS	Royal Medical Services
SDG	Sustainable Development Goal
SMEs	Small and medium-sized enterprises
SuDS	Sustainable urban drainage systems
SURE	Systemic Approach to Sustainable Urbanization and Resource Efficiency in Greater Amman Municipality
UCLG	United Cities and Local Governments
UCLG-MEWA	United Cities and Local Governments – Middle East and West Asia Section
UHI	Urban Heat Islands
UMF	Global Urban Monitoring Framework
UML	Urban Micro-Lungs
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme

UNESCWA	United Nations Economic Commission for Western Asia
UN-Habitat	United Nations Human Settlements Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNRWA	United Nations Relief and Works Agency
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
USAID	United States Agency for International Development
USTDA	United States Trade and Development Agency
VLR	Voluntary Local Review
VNR	Voluntary National Review
VPD	Vaccine-preventable disease
WCCD	World Council on City Data
WEP	Women's Empowerment Principles
WHO	World Health Organization
WP	Working Paper
WSUD	Water-sensitive urban design
YTJ	Youth, Technology, and Jobs Project





CHAPTER 1: CONTEXT

1.1 Introduction



Sustainable development, economic growth, and social welfare lie at the top of His Majesty King Abdullah II's priorities. Ensuring the sustainable development of cities and communities and the uptake of the 2030 Agenda for Sustainable Development at all levels of governance is of the utmost importance for His Majesty, and it is expected to set the ground for urban development in Jordan in the years to come. As of 2020, Jordan has a gross domestic product (GDP) per capita of JD 3,036 (US\$4,283). The average growth rate is 4.06% per annum (1993-2022).

In 2015, Jordan committed to the 2030 Agenda and reported on the progress toward achieving the SDGs. Jordan submitted its first VNR in 2017 and developed the second one in 2022. The city's municipal administration, GAM, plays a critical role in implementing the 2030 Agenda in Jordan, with Amman being the main urban and economic centre in Jordan and home to 36% of the country's inhabitants, including many refugees, mainly from Syria and Palestine. The city faces a range of socio-economic challenges related to the rapid urbanization that is outpacing the development of sustainable infrastructure, as well as challenges related to the influx of migrants. Around 200,419 registered Syrian refugees live in Amman (May 2022, UNHCR).² The unemployment rate is relatively high in the city, reaching 24.8% in 2021, and it disproportionately affects women and young people.

Over the past decade, GAM has developed strategies, policies, partnerships and plans linked to one or more of the SDGs, with

the goal of making the city more resilient, sustainable and safe. In 2015, GAM committed to meeting the targets of the Paris Agreement on climate change, which was followed by the introduction of a range of climate mitigation and adaptation measures in the city. Amman also joined C40, a network of cities fighting against climate change, and in 2019, Amman released the Amman Climate Action Plan,³³ setting out a path towards carbon neutrality by 2050.

To ensure that the city is well prepared to address future shocks and stresses, in 2014 Amman joined the 100 Resilient Cities network, and in 2017 it launched the Amman Resilience Strategy,⁴⁴ which is currently being implemented. It has delivered a range of resilient infrastructure projects, grounded in inclusive and comprehensive policy that inspires enhanced community participation in resilience-building and deployment of the most up-to-date technologies. Building on these efforts, with the aim to reinforce the 2030 Agenda's Goals and values in the city and in the country, as well as to support the post-COVID recovery, Amman developed its first VLR, which is also the first local review in the Arab region.

2 Total Registered Syrians, UNHCR (2022).

3 The Amman Climate Plan (a vision for 2050 Amman), Ministry of Environment & GAM (2019).

4 Amman Resilience Strategy, Resilient Cities Network (2017).

1.1.1 The 2030 Agenda's Goals and Values in the National Policy Context

Jordan is committed to the 2030 Agenda for Sustainable Development and since 2015 has been working to align its national development plans, strategies and policies with the 2030 Agenda's Goals and targets. Jordan submitted its first VNR in 2017 and presented its second VNR to the High-level Political Forum on Sustainable Development (HPLF) in 2022. Jordan has also been mainstreaming SDGs within its policy initiatives, most notably including the Government's Indicative Executive Programme 2021-2024 (GIEP), Jordan's Green Growth National Action Plan 2021-2025, and the National Social Protection Strategy 2019-2025. In addition, the country's government has established plans and strategies reinforcing the implementation of the principle of "leaving no one behind" in the policy context, for example through the National Strategy for Women in Jordan 2022-2025. It established a permanent ministerial committee at the Prime Ministry to mainstream gender into the government's work, and it developed a Gender Mainstreaming Policy that integrates gender into all ministries' and official institutions' plans.

According to Jordan's second VNR, developed in 2022, the country has progressed in relation to 62.7% of the SDG indicators. Its performance remained unchanged in relation to 19% of the indicators, while negative trends have been observed in relation to 18.4% of the indicators. The country has made the most notable efforts in line with SDG 2, SDG 4, SDG 6, SDG 9, SDG 12 and SDG 14. However, its overall progress toward the SDGs is hindered by a range of

factors. These include refugee flows due to regional conflicts that have impacted Jordan's economic trajectory (the rate of economic growth decreased from 6.5% during 2000-2009 to 2.4% during 2010-2019), supply chain disruptions due to the Russia-Ukraine war, and chronic challenges such as water shortages and reliance on external sources of energy that further increase the risks associated with climate change.⁵ Jordan also faces the difficulty of combating its high unemployment and poverty rates, and the development disparities across the country.

To accelerate progress toward the SDGs, Jordan plans to implement the Amman Water Desalination and Conveyance Project, which would generate over 250 million cubic metres of desalinated water a year,⁶ as well as the National Railway Project, to develop a 418 kilometre standard-gauge railway track.⁷ The newly launched Economic Modernisation Vision of the country focuses on improving the quality of life and achieving comprehensive economic sustainable growth by delivering 1 million jobs for Jordanians within the next decade. Jordan also plans to strengthen the institutional structure and capacities needed to achieve the SDGs through the Jordan Development Portal, which will serve as a central repository for Jordan's sustainable development data and assist in the formulation of future development plans and strategies in the country.

Jordan recognizes that local governments significantly contribute to the accomplishment of numerous SDG targets. This was highlighted in the second VNR, which affirms the commitment of Jordan to incorporate the SDGs at all levels, including the local level. SDG localization has been identified as one of the pillars in the road map towards implementing the SDGs. In parallel, the municipalities make efforts to streamline the SDGs and align them

5 Jordan Second VNR, Hashemite Kingdom of Jordan (2022).

6 Developers Weigh Up Jordan's Aqaba-Amman Water Project, Energy and Utilities (2022).

7 Gov't, SJIF Sign MoU to Explore National Railway Network Investments, Jordan Times (2022).

with national development objectives, the most notable examples of which include the Amman Resilience Strategy and the Amman Climate Action Plan. That being said, the municipalities also face capacity gaps that require enhanced focus on training, improved data access and availability, improved revenue generation, and access to finance.

1.1.2 The City of Amman

Amman is located in Capital governorate, one of the 12 governorates in Jordan, bordered by Zarqa governorate to the north and northeast, by Balqa and Madaba governorates to the west, and by Karak and Ma'an governorates to the south.⁸ Geographically, Capital governorate is situated in the Mountain Heights Plateau,⁹ which is the highland that extends through the entire length of the western part of the country, and which separates the Jordan Valley and its margins from the plains of the Eastern Desert. This region receives the most rainfall, and therefore, has the greatest amount of vegetation. In addition, Amman has long, hot, breezy summers, and cold, short winters.¹⁰

Although the first human settlements in Amman date to the 8th century BCE, the city did not experience lasting urbanization until the 19th century, when the country was ruled by the Ottoman Empire. The Greater Amman Municipality¹¹ was established in 1909.¹² The city rapidly expanded between 1900 and 1921 due to the construction of the Ottoman Hejaz railroad in 1905 and the foundation of the

Hashemite Emirate of Transjordan in 1921. The city grew further between 1948 and 1967, expanding towards the surrounding hills, and accommodating a large number of Palestinian refugees fleeing the Palestinian conflict in 1948.¹³

By 1967, the city's population had increased to over 500,000 inhabitants on an area of 42 square kilometres, and by the late 1980s, the population had reached 1.5 million inhabitants on an area of 530 square kilometres.¹⁴ It reached 2.5 million inhabitants and extended over 680 square kilometres by the mid-2000s, and from 2009 to 2016, the size of the area grew to reach approximately 800 square kilometres. Conflicts in Iraq and Syria causing displacement catalysed new waves of refugees, pushing Amman's population to over 4 million residents.¹⁵ As of 2021, Amman had a population of 4,000,000 (Figure 3).¹⁶

⁸ Amman Spatial Profile, UN-Habitat (2021).

⁹ Jordan is divided into three main geographical areas: the Heights Valley, the Mountain Heights Plateau, and the Eastern Desert or Badia Region.

¹⁰ Updated Submission of Jordan's 1st Nationally Determined Contribution (NDC), Ministry of Environment (2021).

¹¹ Greater Amman Municipality and Amman are used in this document interchangeably.

¹² Greater Amman Municipality.

¹³ Amman Resilience Strategy, 100 Resilient Cities & GAM (2017).

¹⁴ Ibid.

¹⁵ Ibid.

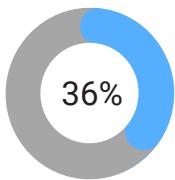
¹⁶ Amman Urban Observatory (2021).

4,000,000

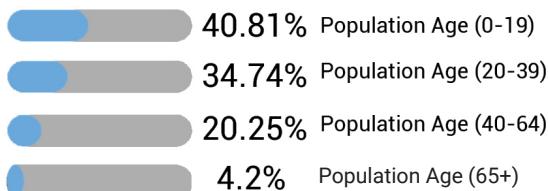
population of Amman

Amman

Jordan 11,057,000



population Male/Female



Population Density
528.8 persons/km²

Average life expectancy

74 years

11 million

Jordan's population

36%

population in Amman in
relation to Jordan

200,419

Syrian refugees in Amman

675,433

Syrian refugees in Jordan

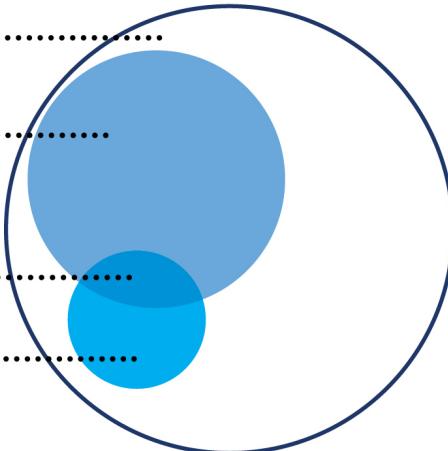


Figure 3. Demography of Amman

Contemporary Amman is the political, cultural, and economic centre of Jordan and among the top tourist destinations in the country and in the Arab region. It is recognized for its ancient history and rich cultural heritage, including Amman Citadel, located on Jabal al-Qala'a hill, and the Roman Amphitheatre. Amman's geographic location in the northwest of Jordan places the city in a strategic position at the crossroads of different trade routes in the region, and makes it a centre for industrial and commercial activities, banking, and educational institutions.

Although Amman was heavily affected by the global financial crisis, regional conflicts, and the COVID-19 pandemic (see Chapter 3 for more details on the impacts of the COVID-19 pandemic on Amman), it remains the fourth most-visited city in the region, with more than a million tourists who bring in revenues of \$1 billion each year. The city is popular for medical tourism, the value of which is also estimated at \$1 billion.¹⁷ Being Jordan's industrial centre, Amman also attracts major investments. In addition, it has one of the best education systems, and it ranks highly in the Arab region in regard to the quality of its electricity and telecommunications infrastructure.¹⁸

17 Amman Resilience Strategy, Resilient Cities Network (2017).

18 The Global Competitiveness Report (2017–2018), World Economic Forum (2017).

1.1.3 The Greater Amman Municipality

Amman is governed by a city council, chaired by the Mayor. In line with GAM Law 18 of 2021, the Mayor of Amman is appointed by the Cabinet for four years (and is not elected by popular vote like other mayors in the country), and reports to the Prime Minister. As of 22 March 2022, the Mayor is Dr. Yousef Al. Shawarbeh, who was re-appointed in 2022 for a second four-year period.

The responsibilities of the GAM municipal administration include: planning and neighbourhood development (e.g. zoning, issuing building and occupational licences); the development and management of parks, recreation spaces, and playgrounds; public works, including transport and road infrastructure; management of solid waste, including collection, treatment, and transportation; organization of cultural and social activities; health and occupational control; economic development, and many more.¹⁹ GAM's mandate does not include education, public security, or water and electricity provision, which are managed by other governmental organizations and utility companies.

The city council has 42 members, 22 of whom are elected and represent the 22 districts of Amman. Fourteen other members are appointed by the Cabinet and include representatives of public sector companies and other governmental institutions that have a mandate within Amman's boundaries,

or are the representatives of minority groups living in Amman. According to Article 4 of the aforementioned Law 18 of 2021,²⁰ at least 25% of the members of the council should be the female candidates who ranked highest in the municipal elections. Currently, the council has seven female members. The highest-ranking administrative official in Amman is the City Manager, who manages the daily operations of the GAM municipal administration. GAM employs 23,000 people.

The GAM administration has a distinctive administrative status in comparison with other municipalities in Jordan and is mostly financially independent from the state.²¹ GAM's budget for 2022 is JD 432 million (approximately \$609 million), covering projects in the capital and operational costs.²² The main budget sources include property taxes, levies and fines, return on investments, central government grants, grants from foreign partners, interest on cash investments, and income from the sale of land and property leases.²³ Amman is authorized to receive grants and take loans with the approval of the Cabinet, and it can fully benefit from the support of international donors and financing agencies, including the EBRD, Agence Française de Développement (AFD), GIZ, and KFW Development Bank, among others (see the SDG 17 subsection in Chapter 2 for more information).

The municipality spends most of its budget delivering essential urban infrastructure and services. It has recently invested in expanding transportation links, developing transit hubs, delivering major waste management projects, climate change mitigation and adaptation initiatives, including stormwater and flash

19 Electronic services provided by GAM. Electronic services provided by GAM.

20 Greater Amman Municipality website.

21 The national government contribution to GAM's budget is minimal and typically comes from the proceeds of the 8% fossil fuel tax. Amman Spatial Profile, UN-Habitat (2022) p.168.

22 Annual General Budget Report, GAM, (2019-2023).

23 Revenues from taxation are administered by the Income and Sales Tax Department (ISTD) and the Land and Survey Department which is responsible for property taxes, all reporting to the Minister of Finance. The tax collection function is managed by the Revenue Collection Department within GAM, which reports to the Deputy City Manager (Financial Affairs Directorate).

flood prevention, and resilient infrastructure, which are discussed in depth in Chapter 2. To attract new investments and reinforce partnerships with the private sector, in 2018 GAM established a municipal company, Amman Vision for Investment and Development. This company is currently developing a portfolio of investable projects in the city that will be promoted nationally and regionally.

An important role in improving the capacity of Jordan to deliver on SDGs is played by the universities and other higher education institutions. Over the last decade, higher education in Jordan has expanded, and there are now 10 public universities, 17 private universities, and 51 community colleges. The number of students enrolled at both public and private universities is estimated at nearly 236,000; 28,000 of the total are Arab or foreign nationalities.²⁴

GAM's vision is for Amman to be a leading municipality in Jordan and a resilient, modern, safe, sustainable city, attractive to both its inhabitants and to investors, and built on a diverse, unique heritage.²⁵ This vision is being executed through a strategic and holistic urban planning approach that is based on sustainable development. It is directed towards improving the quality of life and driven by smart city solutions, as presented in Chapter 2.²⁶

1.1.4 Advancements in Localizing the SDGs



Since the introduction of the 2030 Agenda in 2015, GAM has taken numerous steps to localize and achieve the SDGs. Having joined the 100 Resilient Cities Network in 2014, it developed the Amman Resilience Strategy as a stepping stone to improving the city's resilience, encouraging innovation and reinforcing its connectivity. In 2015-2016, GAM underwent the ISO 37120 "Sustainable cities and communities" certification process,²⁷ which affirmed the city's commitment to measuring the SDGs at the local level, as did the assessment of Amman against the Global Cities Indicators and the indicators pertaining to quality of life, education and social justice within the Ukid project.

Determined to address climate change challenges, reduce greenhouse gas (GHG) emissions, and become climate-neutral, Amman joined the C40 cities network, and in 2019 it launched the first Climate Action Plan in the Arab region, which is currently being reviewed. In 2020, the Green City Action Plan (GCAP) went into effect, the plan emphasizes the importance of improving the quality of life and addressing adverse effects of climate change in the city by increasing access to open, public and green spaces. Institutional changes followed these policy developments, and in 2016 Amman set up a municipal committee dedicated to mainstreaming sustainable development initiatives within GAM business areas. In 2005, GAM developed the Child Friendly Cities initiative which aimed to improve the quality of programmes offered to children in Amman. As part of this initiative, municipal decision-makers such as city council members were given training about children's rights, and

24 Ministry of Higher Education and Scientific Research, (2022).

25 GAM's vision and mission.

26 Electronic Transformation of GAM, GAM (2020).

27 Foundation Report #8: Amman, Jordan, AUO (WCCD), (2016)

the initiative was embedded in the Municipal Agenda and Master Plan.²⁸

Currently, GAM is working towards reinforcing policy coherence on sustainable development in various ways, for example by improving operational planning. It is linking projects and initiatives with the city's strategic goals, the national objectives, and the SDGs, and it continues to measure the city's progress toward achieving the SDGs, guided by the World Council on City Data (WCCD), ISO standards, and others. GAM is also planning to use the Urban Monitoring Framework as a guiding principle for measuring progress towards achieving the SDGs in the future.

Amman faces a range of challenges in SDG localization due to limited institutional capacities, especially to coordinate activities within and among public sector institutions, limited access to funding and finance, and limited access and availability of urban data disaggregated by various categories. Challenges also exist in acknowledging the situation of women and vulnerable groups throughout the city. Access to critical urban infrastructure and services including potable water, healthcare, housing, and education in Amman is challenged, in part due to the influx of migrants at a rate that surpasses infrastructural capacity. This has been further exacerbated by COVID-19 and by the ongoing political and economic instability in the Arab region, which also caused adverse effects on tourism and investment. The annual cost of supporting Syrian refugees resident in Jordan is estimated at \$2 billion.²⁹

It is essential to build the capacity of the entities working to achieve the SDGs, to take coordinated action to mainstream the SDGs and connect them with business opportunities and socio-technological innovation, and to

implement evidence-based and community-led planning for development, in order to ensure Amman's sustainable development in the years to come.

1.2 Methodology

1.2.1 Guiding Principles

This VLR was inspired by Volume 1 and 2 of the Guidelines for VLRs by UN-Habitat and UCLG,³⁰ adapted and customized to the context of Amman. Four principles guided the development of this VLR: it should be evidence-based, participatory, meaningful, and actionable. These principles are discussed in Table 1.

28 Child Friendly Cities Initiative, UNICEF (2022).

29 Jordan's Response Plan for the Syrian Crisis, (2022).

30 There is no one approach to developing VLRs and a range of guidelines developed by UN agencies and other international organizations and institutions exist.

Table 1. Four Principles of VLRs

Principle	Rationale	Implementation
Evidence-based	Evidence and data collection is an essential part of an evidence-based policy process and decision-making. It plays a critical role in reporting on the progress towards the SDGs and in the formulation and implementation of well-targeted and adequate responses to urban development challenges.	This VLR was developed based on reliable quantitative and qualitative data gathered through surveys and interviews, validated through triangulation with documentary data sources and stakeholder consultations that took place in-person and online.
Participatory	A participatory approach allows for efficient and effective data collection and validation, including the removal of biases. It improves the ownership of the VLR process, and it improves the rapport among various stakeholders in the process.	This VLR was developed in a collaborative manner by UNESCWA, UN-Habitat, and UCLG-MEWA, in close collaboration with GAM. It reflects GAM's vision for the city's development and the voices of over 60 entities from different sectors (including international organizations, businesses, academia, and civil society organizations that represent the interests of vulnerable groups) consulted in the process to develop this VLR.
Meaningful	This VLR is intended to reflect on the development challenges and propose the ways to address them (based on available evidence) to create a common vision for city development, and to reinforce the Goals and values of the 2030 Agenda amongst various groups of stakeholders.	The VLR reconstructs and reconciles various local perspectives towards the development of Amman by enabling dialogue between different groups of stakeholders, exploring their experiences, practices and values. It also allows them to reflect on future opportunities.
Actionable	One of the goals of VLR is to prompt action, especially to support the development and refinement of urban policies and strategies, projects, programmes, and partnership initiatives; to strengthen current efforts to remove bottlenecks to accelerate progress towards the SDGs; and to identify the potential to upscale transformative urban actions based on evidence gathered.	The VLR looks at the past and the future. It discusses the city's performance on the SDGs to date and identifies the bottlenecks to accelerate the progress towards achieving the SDGs, and development leverages. The VLR collects evidence about the city's development challenges and the ways of addressing them, and in doing so prepares the ground for a more informed approach to the formulation and implementation of urban initiatives in the future.

1.2.2 Preparation Process

This VLR focuses on a review of the city's progress towards SDG 3, SDG 7, SDG 9, SDG 11, SDG 13 and SDG 17. The Goals and targets were selected based on their relevance to the mandate and the strategic objectives of the municipality, as well as data access and availability. While developing this VLR, special attention was paid to mainstreaming gender considerations and discussing the challenges facing refugees, although this was challenging due to limited availability of data.

Developing this VLR took seven months and was divided into three distinctive phases, discussed at length in Annex 4. It was centred around the preparation of Working Papers (WP) for SDG 3, SDG 7, SDG 9, SDG 11 and SDG 13 (see Chapter 2) and was closely tied to data collection and stakeholder consultation overseen by the Chairs of each WP. The Working Paper preparations were chaired as follows: SDG 3 was chaired by WHO; SDG 7 and SDG 13 were chaired by UNDP; SDG 11 was chaired by UN-Habitat; and SDG 9 was chaired by UNIDO. Ten stakeholder consultation meetings in total were carried out in relation to the Working Papers, two in relation to each paper. The list of stakeholders who attended stakeholder consultation meetings can be found in Annex 5. Development of the Working Paper on SDG 17 differed in comparison to those on the other SDGs and was centred around the collection of data via a survey.

Within GAM, the VLR effort was led by the GAM VLR Committee. In total, more than 60 entities from the public sector, the private sector, civil society, academia, and UN and international organizations were consulted in the preparation of this report.

1.2.3 Data Collection

This VLR was developed based on data sourced from GAM, the Amman Urban Observatory (AUO), the national Department of Statistics (DoS), UN-Habitat and others. The collection of quantitative and qualitative data took place between January and June 2022. The quantitative data was particularly useful in understanding the city's performance towards achieving the SDGs, and it was sourced through inquiries to the Amman Urban Observatory, UN-Habitat, and others. The collected quantitative data is presented in Annex 1, the Statistical Annex, includes references to the Urban Monitoring Framework and the World Council on City Data indicator set, based on the ISO 37120 standard, "Sustainable cities and communities."

Qualitative data allowed for a better understanding of the context of Amman, its actions for the SDGs, and the situation of the population groups at risk of exclusion in both Amman and Jordan, to ensure that no one is left behind. It was sourced through two surveys, 10 stakeholder consultations, and a number of informal interviews and bilateral meetings. The first survey was sent to actors involved in stakeholder consultation. The second survey was of stakeholders involved in collaborative projects with GAM, and its purpose was to collect data on the city's performance in relation to SDG 17.

The stakeholder consultations were centred around the preparation of the Working Papers. Informal interviews were carried out with selected representatives of GAM (the list of persons interviewed can be found in Annex 6), while bilateral meetings took place with a wide range of stakeholders. More information about this can be found in Annex 4, which is dedicated to the phases of the VLR's development. An important source of both quantitative and qualitative data for the VLR was a draft report on the progress towards the 2030 Agenda prepared by GAM in 2021.

During data collection, a range of obstacles was identified. They included, most notably, quantitative data gaps (especially in relation to recent data, e.g. 2018-2022, that could be used to describe GAM's performance in line with SDG targets). A lack of urban data disaggregated by various categories, including gender and vulnerability status, was also observed, as were data discrepancies (e.g. regarding the number of city inhabitants). Where no relevant data about GAM could be found, national-level data was used to depict the broader context of the city, and this data is included in Annex 1, the Statistical Annex. To address data discrepancies, the data provided by DoS was given priority in referencing.

1.3 Complementarity between VLR and VNR



The development of this VLR coincided with the development of the second VNR for Jordan by the Ministry of Planning and International Cooperation and the UN Resident Coordinator Office in Jordan, creating opportunities to discuss national and local development priorities and bottlenecks to accelerating progress towards the SDGs. It also presented an opportunity to reflect on the complementarity between the two documents and the synergies between their key messages, to validate the data and evidence used in both documents and for cross-referencing, as some data included in this VLR was sourced from the VNR.

The VNR and VLR discuss the achievements and challenges in realizing the SDGs at the national and local level respectively. They flag the importance of further mainstreaming the SDGs into local policies and policy contexts (also through better data collection, processing, and use in the evidence-based policy process), and of reinforcing Amman's role in international good practices and knowledge exchanges. The complementarity between the VNR and the VLR plays an important role in ensuring policy coherence for sustainable development. It will also support the formulation of urban initiatives based on mutually reinforcing policy objectives and their effective implementation, and the allocation of resources to implement urban policies. The degree to which national and local reviews acknowledge and align with each other can be considered a measure of the effectiveness of the multi-level governance systems in the country.³¹

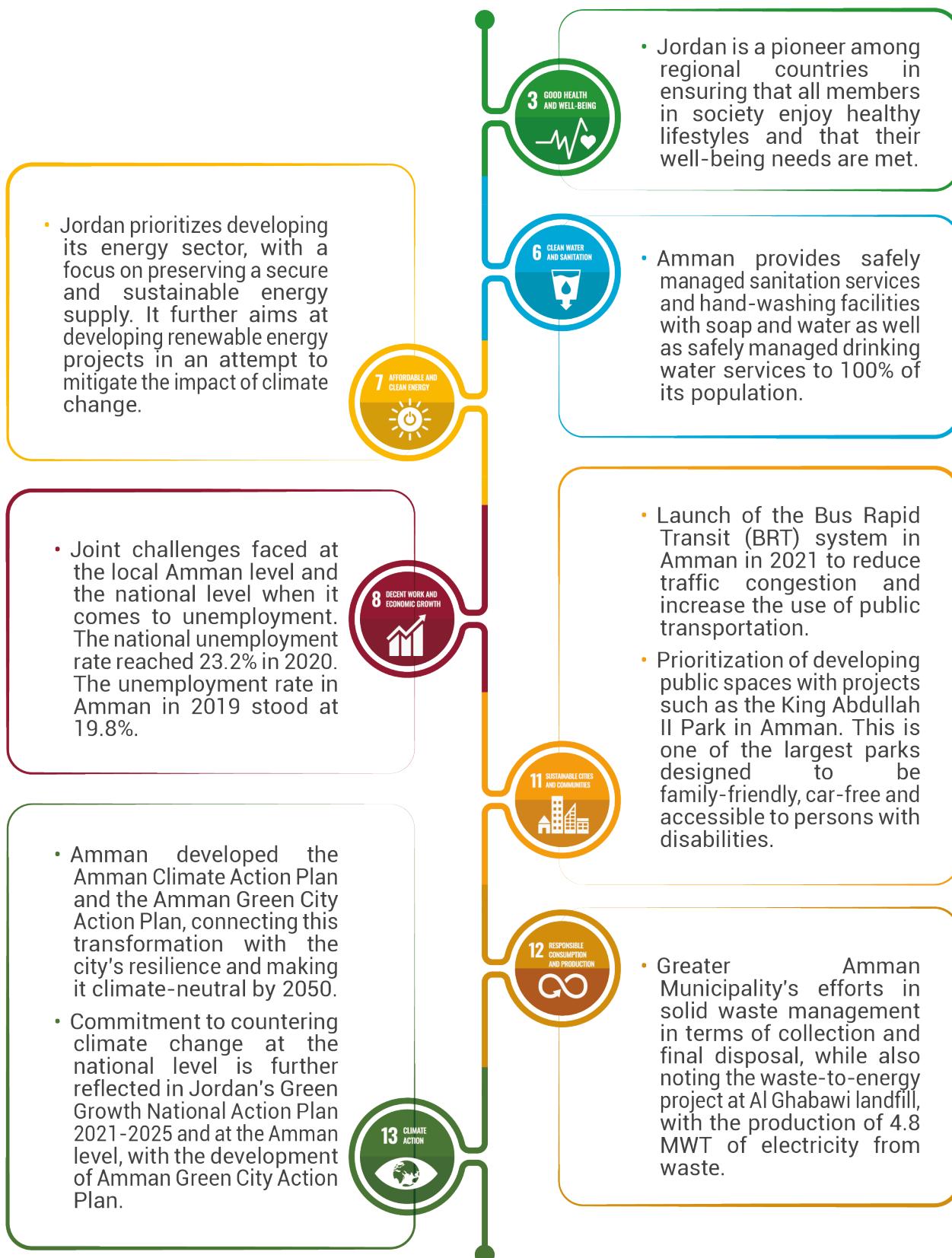


Figure 4. VNR/VLR Alignment. Source: Jordan 2nd VNR

1.4 Structure

This VLR comprises three chapters. Chapter 1, the introduction, explores Amman's geographical, socio-economic, political, and administrative context, as well as the city's commitment to the 2030 Agenda for Sustainable Development. It also highlights GAM's key initiatives and the achievements in mainstreaming SDGs in municipal policies. The VLR's methodology is explained, and the chapter concludes with a reflection on the complementarity between the VNR and the VLR.

Chapter 2 discusses Amman's performance on SDG 3, SDG 7, SDG 9, SDG 11, SDG 13, and SDG 17 and in relation to SDG targets and indicators. Whenever possible, it focuses on the situation of vulnerable groups, including refugees and women. It is divided into six sections, one for each SDG discussed. Each section starts by highlighting the main data referenced in the subsection and flagging key issues. This is followed by a detailed target review that explores the city's performance in line with SDG targets, and it closes with lessons on policy and practice. Due to the challenges regarding data access, the chapter includes references to national-level indicators used as proxy for SDG reporting. Each SDG target overview concludes with a subsection on implications for policy and practice in which the bottlenecks for SDG action and the potential for improvement are discussed, among other points.

Chapter 3 discusses the impact of COVID-19 on the development of both Amman and Jordan. It then presents the key messages of the VLR, specifically in relation to further mainstreaming the Goals and values of the 2030 Agenda in Amman in municipal planning and operations, by evidence-based policymaking, and through the development of multi-stakeholder, cross-sectoral and people-first SDG partnerships, unfolding the potential to accelerate the city's sustainability transformation.





Figure 5. GAM Council Members 2022-2026 (Source: GAM, 2022)

CHAPTER 2: AMMAN'S PROGRESS ON THE SDGS



2.1 SDG 3: Good Health and Well-Being

Ensure healthy lives and promote well-being for all at all ages

2.1.1 Highlights

Access to health is a fundamental human right and a key indicator of sustainable development.³² In Amman, as across Jordan more broadly, healthcare infrastructure and services are provided by a variety of institutions, including public and private sector entities. Health service coverage in Amman is centred around selected neighbourhoods, and 47.3% of the population of the city has access to public hospitals and public health centres within a 15-minute walking distance.³³ In 2015, only 41.2% of Amman's population had health insurance.³⁴ Uninsured Jordanians pay

a subsidized price (20% of cost) for selected inpatient and outpatient services at Ministry of Health facilities, or pay full cost at private facilities.³⁵ Also, primary and secondary healthcare services are provided to registered Syrian refugees who live in Amman at the non-insured Jordanian rate at public health centres and government hospitals.³⁶ Poorer individuals and children under 6 years of age have access to free health services at Ministry of Health facilities.³⁷

Regarding communicable diseases, the review notes the increased incidence of chickenpox and pulmonary tuberculosis. In relation to non-communicable diseases, it should be noted that Amman is a highly motorized city, with 90% of atmosphere air pollution emitted by road traffic. This can have major effects on the urban population's health and cause respiratory diseases. In addition, access to healthcare infrastructure and services in Amman has been limited by the COVID-19

³² Good Health and Well-Being, United Nations (2022).

³³ Amman Spatial Profile, UN-Habitat (2021, p.106).

³⁴ The Amman Climate Plan (a vision for 2050 Amman), Ministry of Environment & GAM (2019).

³⁵ Enhancing the Competitiveness of the Health Sector in Jordan, Jordan Strategy Forum (2020).

36 Help Jordan, UNHCR Jordan.

³⁷ The Cost and Financial Impact of Expanding the Civil Insurance Program to Vulnerable Jordanians and Syrian Refugees, UNICEF Jordan (2017), pp. 14-15.

pandemic (see Chapter 3 for the impacts of COVID-19).

Air, water, and soil pollution also pose a significant risk to human health and well-being, both of which increase the pressure on an already strained healthcare system in the city. The city faces challenges in relation to non-communicable diseases and mental health data access and availability, especially in relation to the data disaggregated by gender.

2.1.2 Target Review



2.1.2.1 Local Maternal Health Standards

Target 3.1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

As of 2020, the maternal mortality rate for Amman is 30.9 out of 100,000 live births; however, there is no available data on infant mortality rates.³⁸ At the national level, there has been significant progress in reducing maternal and infant mortality as a result of the expansion and improvement health infrastructure, which is monitored by Jordan's Maternal Mortality Surveillance and Response System and was launched in collaboration with the United States Agency for International Development (USAID).³⁹

This new data collection and management system helps to identify root causes of maternal deaths, implement targeted interventions, and monitor their effectiveness (international cooperation is discussed further below in the section on SDG 17). According to

the Jordan National Maternal Mortality Report, the total number of live births in 2020 was 176,557, and Jordan's maternal mortality rate was calculated at 38.5 cases per 100,000 live births. More than half of maternal mortality incidents took place in Amman.⁴⁰

2.1.2.2 Neonatal Mortality and Children's Health

Target 3.2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.

Routine immunization in Jordan has been mandatory since the introduction of the National Expanded Programme on Immunization and is led by the Ministry of Health. Every child, regardless of nationality, has the right to receive free vaccinations at any health centre affiliated with the ministry. The programme is supported by the United Nations Children's Fund (UNICEF) and includes the provision of various vaccines, health supplies, cold chain equipment and technical expertise, as well as assistance in accessing hard-to-reach areas and vulnerable communities. Jordan's high vaccine coverage rate (95%) has contributed to a declining mortality rate and a decline in the rates of vaccine-preventable disease (VPDs).⁴¹

According to data from the Global Urban Observatory (GUO), in 2020 the mortality rate for children under 5 years of age in Amman was 16 per 1,000 population (Figure 6). The vast majority of births were attended by skilled personnel, which in 2020 was true for 99.7% of

38 Jordan's National Maternal Mortality Report 2020, Ministry of Health & USAID (2020).

39 Quality Health Care, USAID (2022).

40 Jordan's National Maternal Mortality Report, Ministry of Health & USAID (2020).

41 Routine Childhood Immunizations, UNICEF (2022).

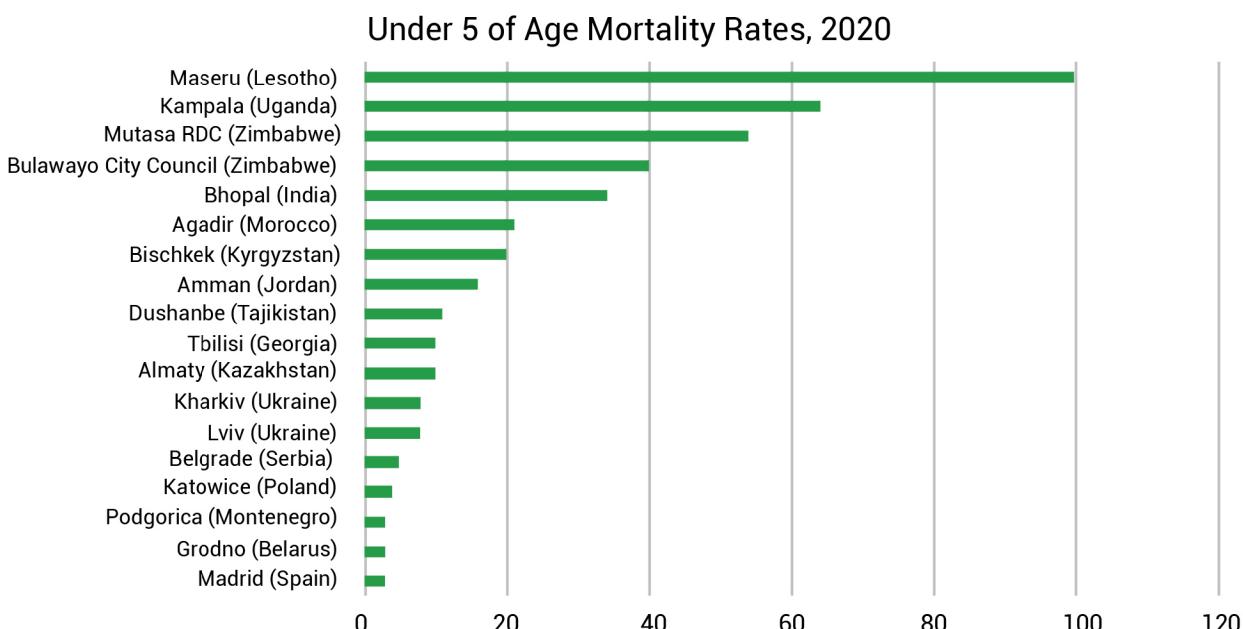


Figure 6. Under 5 of Age Mortality Rates, 2019. Source: GUO (UMF), UN-Habitat.

cases.⁴² The data shows that the immunization rate for children under 5 years of age was 84.4%, while malnutrition prevalence was only 2%.

in 2019, whereas chickenpox cases reached 6,211 cases per 100,000 population in 2018 and dropped to 3,515 in 2019.

2.1.2.3 Communicable Diseases

Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

Limited data is available to fully report on how communicable diseases impact the population's health in Amman. However, according to the Ministry of Health, the average life expectancy in the city in 2020 was around 73.3 years.⁴³ Ministry data also shows that pulmonary tuberculosis cases in Amman have increased slightly in recent years, from 220 cases per 100,000 population in 2016 to 257

According to UNAIDS, in 2020 there were 390 people living with HIV in Jordan. These were mainly men and women aged 25-49, a group that is usually considered high-risk among HIV groups. Less than 100 AIDS deaths were reported in the same year. The government provides free HIV treatment in Jordan, but it faces challenges rolling out PrEP (pre-exposure prophylaxis). PrEP programmes are preventative measures where HIV-negative patients use antiretroviral medication to reduce the risk of HIV infection.^{44,45}

42 Ministry of Health Statistical Report (2021).

43 Ministry of Health Statistical Report (2022).

44 Global HIV Programme, WHO (2021).

45 Primary qualitative data collected from a stakeholder from UNAIDS during the stakeholder consultation for SDG 3 subchapter (March 2022).

2.1.2.4 Non-communicable Diseases and Main Risk Factors

Target 3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

Non-communicable diseases, including cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases, are the leading cause of morbidity and mortality in Jordan, constituting 78% of total deaths.⁴⁶

One of the major non-communicable disease risk factors in Jordan is smoking and vaping. This is further exacerbated by unhealthy lifestyle habits, including low fruit and vegetable consumption and insufficient physical activity. According to USAID research from 2019, hypertension was reported by 22% of survey participants, high cholesterol by 17.7%, and diabetes by 20% of the participants aged 45-69. The prevalence of depression among the survey participants was 18% (see Annex 1, the Statistical Annex).

Effective communication on health is important for informed decision-making and patient-centred care.⁴⁷ Amman is a member of the global Healthy Cities initiative, which focuses on enhancing smoke-free enforcement around public buildings and public transport.⁴⁸ It could be argued that Amman would further benefit from quality, targeted, and consistent communication and awareness-raising campaigns on a number of issues related to residents' health, such as tobacco consumption,

balanced diets, active lifestyles, and mental health (Figure 7).

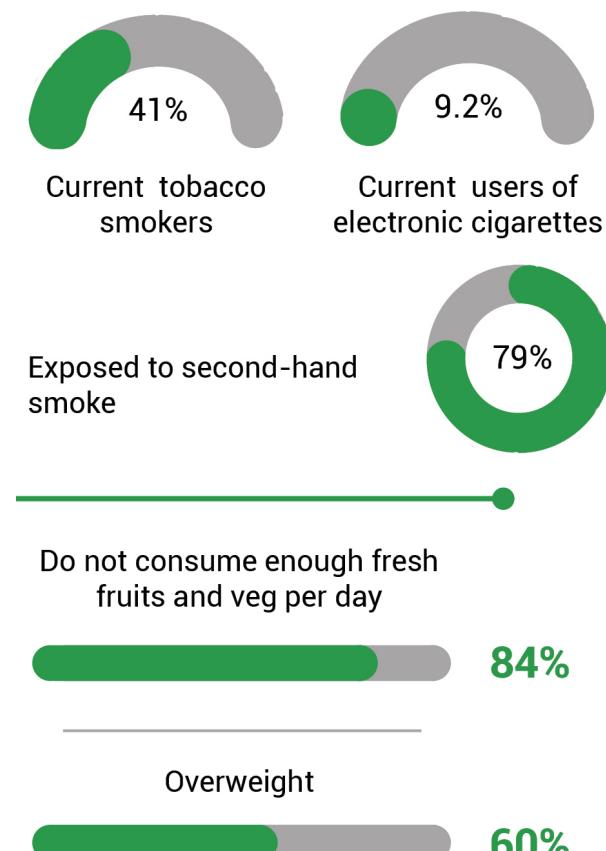


Figure 7. Percentage of Smokers and Overweight People. Source: USAID, 2019.

Anaemia is relatively common among women (aged 15-49) and children (6-59 months) in Amman, affecting 29.5% and 34.2% of each population respectively.⁴⁹ There is a clear gradient in anaemia prevalence in both women and children according to wealth. Poorer women are also less likely to get breast cancer screenings and pap smears than their wealthier counterparts. There is no significant association between the likelihood of obesity and wealth quintile, however. Women in

46 Non-communicable Diseases Leading Cause of Death in Jordan, Ministry of Health & Center for Strategic Studies (2019).

47 The Role of Information Resources on Building Health Awareness-Study Conduct in Amman Jordan, Alsamydai A, Baqa'in G, et al. (2018).

48 Partnership for Healthy Cities.

49 Analyzing Equity in Health Utilization and Expenditure in Jordan, ThinkWell & UNICEF (2016).

Amman have the lowest prevalence of obesity of all governorates in the country (26.5%).⁵⁰

The Jordan Population and Family Health Survey 2017-18⁵¹ revealed a number of different trends regarding gender: 16% of male inpatient cases versus 7% of female inpatient cases were related to heart disease, while 12% of male inpatient cases versus 7% of female inpatient cases were related to accidents or injuries. Pregnancy or delivery care (27%) and newborn or children's care (11%) were among the most frequent reasons reported by women for receiving inpatient care.

Effective health communication on issues related to sexual and reproductive health and family planning is particularly important considering the large share of the youth population in Amman.⁵² Research carried out in different parts of Jordan as part of the

policy brief on raising awareness of sexual and reproductive health in the country⁵³ details many barriers to accessing these services, whether for prevention, information or treatment. Young people lack knowledge of both what sexual and reproductive health involves and where to seek care. This is compounded by a culture of shame that further hinders people from seeking care and exacerbates communication challenges between healthcare providers and patients. Gender differences highlight the conflict between traditional norms and changing social expectations. Both Jordanian and Syrian research participants identified the need for diverse informational resources.

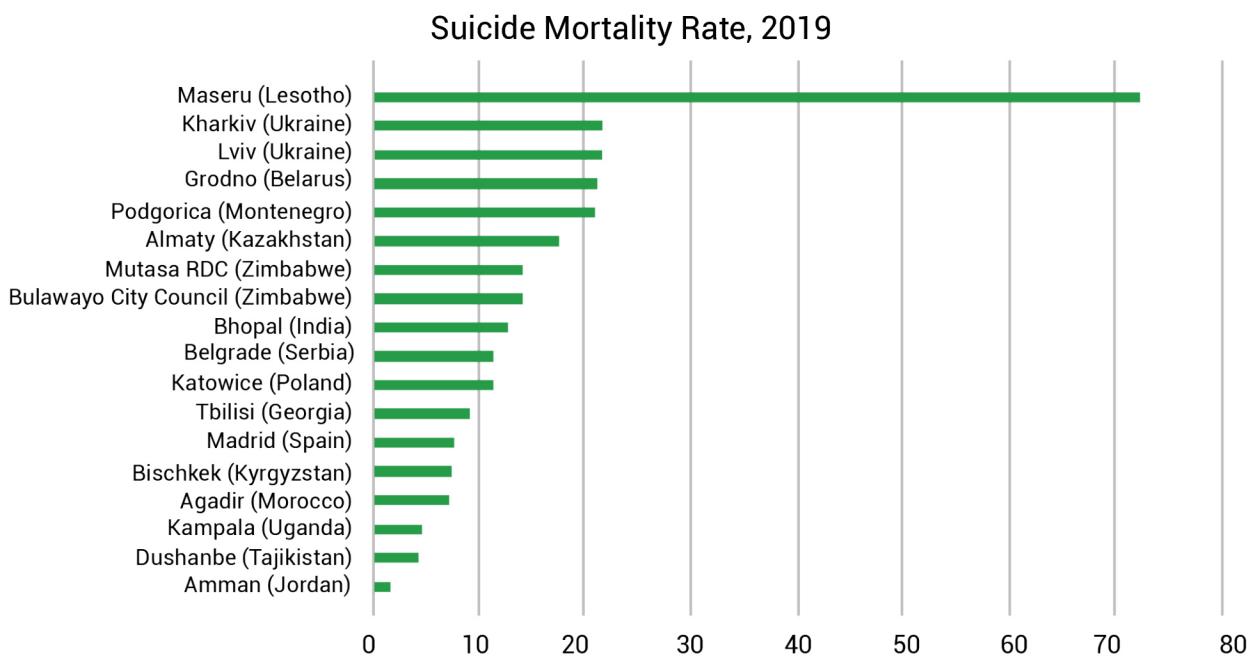


Figure 8. Suicide Mortality Rate, 2019. Source: GUO (UMF), UN-Habitat, 2022.

50 Ibid.

51 Jordan Population and Family Health Survey 2017-2018, DoS & ICF (2019).

52 Estimated Population of 2020 and some of the Selected Data, Department of Statistics, (2020).

53 Raising community awareness on Sexual and Reproductive Health in Jordan, Netherlands Organization for Scientific Research (2020).

In comparison to other cities in the world, very few people in Amman commit suicide (1.6 per 100,000 deaths in 2019 – see Figure 8).⁵⁴ Our Step is a consumer association for individuals struggling with mental health problems. It was established in Jordan by a group of service users, mental health professionals, WHO, and the ministries of health and social development. The association began in collaboration with GAM and established a community centre that further promotes the integration of mental health service users.⁵⁵

2.1.2.5 Urban Traffic Safety and Residents' Health

Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents

Amman is a highly motorized city. With 350 vehicles for every 1,000 population,⁵⁶ individual vehicles are the most popular means of transportation (see the SDG 11 section below). There has been a decrease in traffic-related deaths from 24.4 cases per 100,000 population in 2016 to 4.75 in 2019, according to GUO's Urban Monitoring Framework (UMF). According to the 2020 annual report on traffic accidents issued by the country's Public Security Directorate, 461 deaths were registered nationally in 2020, compared to 643 deaths in 2019, a decrease of over 28%. Nationally, 35% of all fatal accidents in 2020 involved pedestrians, 29% involved drivers, and 36% involved passengers.⁵⁷

There are significantly more men than women with driving licences in Jordan, at 2,053,633 compared to 754,380. Consequently, on the national scale, 1 out of 1,000 women with a driver's licence has been involved in a traffic-related accident involving injuries, in comparison to 6 out of every 1,000 men with a driver's licence.⁵⁸

2.1.2.6 Environmental Challenges and Effects on Urban Population's Health

Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

Jordan is one of the world's poorest countries in terms of water resources. Amman provides safely managed sanitation services and hand-washing facilities with soap and water (Figure 9).⁵⁹ In spite of this, epidemic diseases resulting from water pollution do occur in the city, with diarrhoea cases numbering almost 53,000 in 2019 and food poisoning cases reaching 434.⁶⁰

GAM has a mandate, along with the Jordan Food and Drug Administration (JFDA) and the Ministry of Health, to monitor and inspect all food being traded within the city's borders.

Globally, road traffic causes over 90% of atmospheric air pollution exposure, which affects the health of urban populations.⁶¹ Given that Amman is a highly motorized city, ensuring air quality is a considerable challenge. It is important to have access to data on respiratory

54 See Annex 1, the Statistical Annex.

55 WHO proMIND Profiles on Mental Health in Development: Hashemite Kingdom of Jordan, WHO (2013).

56 Amman Spatial Profile, UN-Habitat (2022), p. 88.

57 Traffic accidents in Jordan, Jordan Times (2021).

58 Ibid.

59 See Annex 1, the Statistical Annex.

60 Ibid.

61 Ambient Air Pollution, WHO (2021).

Proportion of Population with Safely Managed Drinking Water Services in Selected Cities, 2018

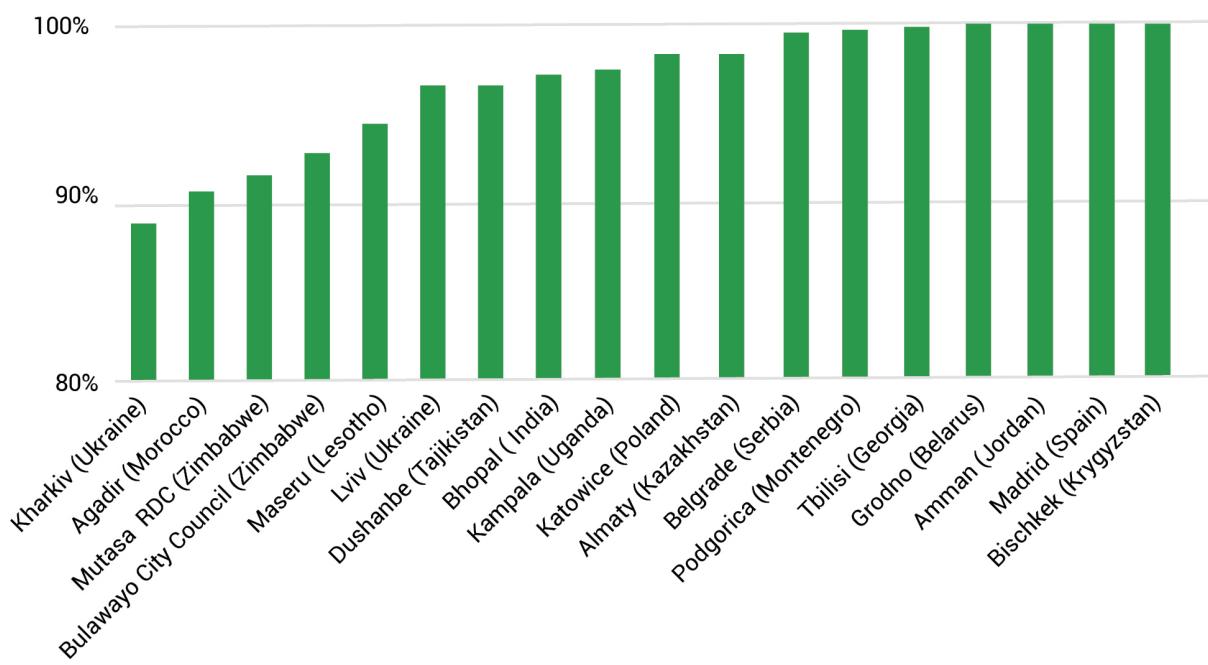


Figure 9. Proportion of Population with Safely Managed Drinking Water Services in Selected Cities
Source: GUO (UMF), UN-Habitat.

diseases segregated by gender, age, and vulnerability, as children and the elderly are considered to be particularly sensitive to air pollution.

Amman is working to reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination. It developed the Amman Resilience Strategy in 2017 to reinforce these goals, most notably through investing in green public transportation (see the SDG 11 section below). Amman's Climate Action Plan, which is currently being implemented, also focuses on reducing the number of private cars in the streets and encouraging a healthy lifestyle through green infrastructure and public spaces. The aim is to improve road safety, reduce traffic accidents, and provide pedestrians with safe sidewalks (see the SDG 13 section below). The plan includes awareness-raising campaigns

2.1.2.7 Growing Health Care Infrastructure

Target 3.c: Substantially increase health financing and the recruitment, development, training, and retention of the health workforce in developing countries, especially in the least developed countries and small island developing States

Universal health coverage has been a strategic goal of the national government for over three decades.⁶² It strives to provide financial protection against illness or injury and access to quality healthcare for all residents. Jordan's GDP was about JD 27.4 billion, equal to \$38.65 billion, and the per capita healthcare expenditure was JD 255, equal to \$359.8.⁶³ The total health expenditure was estimated at JD 2.25 billion in 2017, approximately \$3.17 billion, which accounts for 8.6% of GDP.⁶⁴

Jordan's healthcare system is a complex amalgam of three major institutional groups: the public sector, the private sector, and donors. Within the public sector, the Ministry of Health and Royal Medical Services (RMS) finance and provide care to citizens. The Ministry of Health operates an extensive primary healthcare network with about 2.3 health centres per 10,000 population, with an average patient travel time of 30 minutes to the nearest centre, allowing for easy access to healthcare infrastructure and services by international standards (Figure 10).⁶⁵

Amman is the main centre for healthcare infrastructure and services in Jordan. Public and private healthcare facilities are concentrated in two centrally located districts

Types and Percentages of Health Centres in Amman

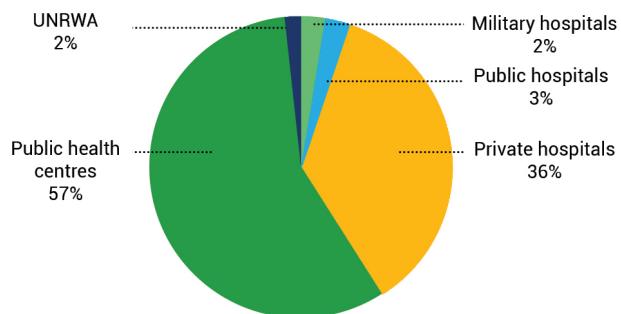


Figure 10. Types of Health Centres in Amman
Source: GUO (UMF), UN-Habitat, 2022.

in the city: Al-Abdali and Zahran (Figure 11). At the city level, 47.3% of GAM's population have access to public hospitals and public health centres within a 15-minute walking distance, while 86.9% are within a 30-minute walking distance.⁶⁶

According to Amman Urban Observatory (World Council on City Data), the capacity of Amman's health sector for inpatient hospital beds per 100,000 population was 180 in 2019. In terms of other indicators related to healthcare coverage, Amman had 189 physicians per 100,000 population in 2018, few nursing and midwifery personnel (4.9 per 100,000) in 2019, and four mental health practitioners per 100,000 population in 2020.

Over the years, Amman has emerged as one of the most desirable locations in the region for medical tourism. It is rapidly developing a reputation for high-quality and affordable private healthcare at international standards of care and customer service, along with an affordable cost structure. Jordan ranks 37 out of 46 worldwide destinations for medical tourism alongside Abu Dhabi, Bahrain, and Dubai according to the 2020-2021 Medical

62 National Strategy for Health Sector in Jordan 2015–2019, The High Health Council (2015).

63 Health Economics Review, Hammad et al. (2022).

64 Ibid.

65 Jordan Health System Profile, Philadelphia University; Ajlouni M (2010).

66 Amman Spatial Profile, UN-Habitat (2022).



Health Centres Per District 2022

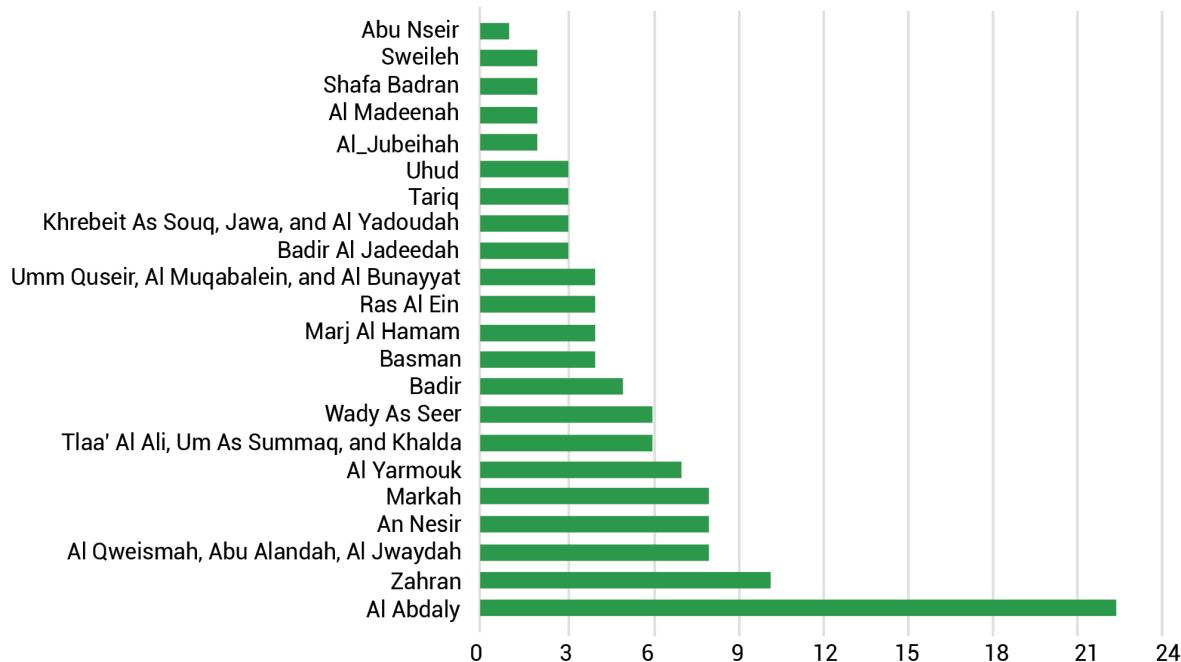


Figure 11. Health Centres Per District Source: GUO (UMF), UN-Habitat, 2022.

Tourism Index,⁶⁷ and 36% of private clinics in the country are located in Amman. Medical tourism generates over \$1 billion in revenues in Jordan annually.⁶⁸

2.1.2.7.1 Required Modernization of Healthcare Coverage System

In Jordan, healthcare providers include the Ministry of Health, Royal Military Services, universities, the United Nations Relief and Works Agency (UNRWA), UNHCR, non-governmental insurance, and private insurance firms. According to the Housing and Population Census, which was carried out in 2015, 64% of Jordanians were insured by at least one type of healthcare provider, and 4.7% received

free healthcare services, putting the total coverage at 68.7% of Jordanians.⁶⁹ In Amman, only 41.2% of the population were covered by health insurance,⁷⁰ meaning that 58.8% were uninsured.⁷¹

Governmental health services are available through public healthcare centres and Governmental hospitals that cover all Governorates. There are no Governmental hospitals in the Governorates of Aqaba and Tafilah. However, one can access emergency lifesaving hospital services in the Royal Medical Services hospitals in these Governorates (Prince Hashem Hospital in Aqaba and Prince Zeid Hospital in Tafilah).⁷²

67 Medical Tourism Index, Medical Tourism (2020).

68 Health Economics Review, Hammad et al. (2022).

69 Enhancing the Competitiveness of the Health Sector in Jordan, Jordan Strategy Forum (2020).

70 Amman Spatial Profile, UN-Habitat (2022), p. 106.

71 Some of the uninsured Jordanians are protected by a royal decree which provides all children under the age of six with free healthcare services at Ministry of Health facilities. In addition, citizens who have been classified by the Ministry of Social Development as poor are all exempted from health care user fees for services offered at Ministry of Health facilities. The Cost and Financial Impact of Expanding the Civil Insurance Program to Vulnerable Jordanians and Syrian Refugees, UNICEF Jordan (2017), pp. 14-15.

72 Help Jordan, UNHCR Jordan.

Refugees and healthcare access

Charities or international donors, such as the United Nations High Commissioner for Refugees (UNHCR) and the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), play a significant role in providing healthcare access for refugees living in Jordan. UNRWA clinics serve more than 1.1 million people, or nearly 56% of the registered Palestine refugees in the country. At UNRWA's 24 healthcare facilities, over 1.9 million general consultations are provided each year, and over 67,000 dental screenings are carried out.⁷³ These clinics also support nearly 70,000 patients with non-communicable diseases, generally diabetes or hypertension.

Additionally, preventive maternal and child healthcare services, family planning, and infant and child feeding programmes are available free of charge at Ministry of Health facilities for all refugees with a valid Asylum Seeker Certificate (for all nationalities) and/or a service card issued by the Ministry of Interior (for registered Syrian refugees only). However, data on access to essential healthcare services for irregular migrants is limited.

As the primary funder of public healthcare for citizens, the national government provides effective health protection and lessens the burden of healthcare costs on the population in general, and particularly for poorer people. However, the government faces challenges in this matter, not least due to growing demand and inefficiencies in service delivery, exacerbated by insurance coverage and delivery systems.

2.1.3 Implications for Policy and Practice



A review of Amman's performance on the targets under SDG 3 reveals the need for further modernization of the healthcare system to address the financial, organizational, and managerial challenges that lead to inefficiencies in service delivery. A shift towards disease prevention and reduction of relevant disease risk factors is needed, specifically a focus on mental health, healthcare surveillance, efficient monitoring and evaluation of healthcare programme implementation, and healthcare insurance system modernization. Healthcare provision also needs to be organized to ensure equal spatial distribution of services within a maximum of 30 minutes' walking distance for all users. The target review also highlights the need to assess and subsequently improve access to

the healthcare system for non-Jordanians and vulnerable groups, including refugees, whether officially registered or not.

In terms of data access and availability, this section highlights the need to develop a national information system to improve access to urban data on healthcare infrastructure and services in general. There is a need for

73 Health in Jordan, UNRWA (n.d.)

data on patients that is disaggregated by gender, age, and vulnerability status, in order to understand how different diseases impact different members of society and to support the development of healthcare solutions tailored to different groups. To avoid increasing pressure on the already strained healthcare system in Jordan, it is also becoming ever more important to highlight the role of urban planning in disease prevention through encouraging healthy lifestyles, including a particular focus on mental well-being. This includes creating open, green and safe public spaces and green infrastructure, and improving the quality of, and access to, walking and cycling infrastructure. It is also important to implement

awareness campaigns discouraging tobacco consumption in general and in closed spaces in particular, and to promote healthy lifestyles. Water quality should also be improved for the purposes of disease prevention. Technological advancement and the growth of the information and communications technology (ICT) sector (see the section on SDG 9 for a discussion on ICT sector growth) can play an important role in delivering resilient, innovative, and energy-efficient healthcare infrastructure (see the section on SDG 7 for a discussion on energy efficiency) and healthcare services, and in delivering awareness-raising campaigns.



Figure 12. Sanitation of Public Facilities and Spaces, September 2020
(Source: GAM at Facebook, https://www.facebook.com/cityofamman/photos/a.640578025972535/3668888546474786/?_tn_=%2CO*F, accessed 26/09/2022)

7 AFFORDABLE AND CLEAN ENERGY



2.2 SDG 7: Affordable and Clean Energy

Ensure access to affordable, reliable, sustainable and modern energy for all

2.2.1 Highlights

Access to affordable and clean energy in Amman is bound by a range of factors, most notably the country's transition towards a reliable, affordable, sustainable and self-sufficient low-carbon economy. Over the last five years, Jordan has developed policies, programmes, projects and partnerships that aim to reduce fossil fuel imports, improve energy efficiency, and bring various groups of stakeholders into the process. Amman plays a critical role in implementing these policies and has become a testing ground for innovative energy programmes such as the Renewable Energy and Efficiency Law (REEEL) (Law 13 of 2012), the Second National Energy Efficiency Plan, and the Green City Action Plan. It has also functioned as a testing ground for the implementation of the building codes set by the Jordan National Building Council (JNBC), the guidelines on Leadership in Energy and Environment Design (LEED), and the guidelines

for green buildings issued by the Jordan Green Building Council. GAM is responsible for the issuing of building licences and the establishment of zoning regulations, all of which are of critical importance for meeting SDG energy targets.

The review of the city's progress toward the targets under SDG 7 indicates that the energy sector is the biggest contributor to GHG emissions in both Jordan and Amman, and that the primary source of emissions in Amman is electricity usage by commercial and residential buildings (see the sections on SDG 9, SDG 11 and SDG 13 for discussion on resilient urban infrastructure). It flags the fact that residential energy consumption from 2004 to 2014 increased at a rate of 8.5% at the national level, greater than the pace of economic growth in Jordan, and it highlights the city's investment in solar energy production, which has the potential to offset the rising demand for electricity. The target review also discusses the limited access to recent statistical data about the access and availability of affordable and clean energy, and the progress towards energy efficiency targets in Amman.

2.2.2 Target Review



2.2.2.1 Affordable, Reliable and Modern Energy Services

Target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services

In recent years, Jordan has been working to improve its energy security through diversifying energy sources, decreasing reliance on imported fossil fuels, improving energy efficiency, and investing in the development of local and renewable energy sources, to ensure accessible and reliable energy supplies for all inhabitants and sectors of the economy. At present, 95% of Jordan's total primary energy mix constitute imported fuels, mainly crude oil and natural gas, which generate 88% of the country's electricity.⁷⁴ The figure below shows

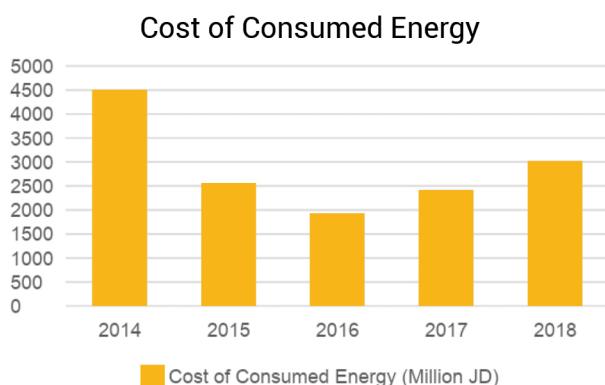


Figure 13. Cost of Consumed Energy (2014-2018); Source: The Ministry of Energy and Mineral Resources⁷⁴

the cost of consumed energy from 2014 to 2018 (Figure 13).

An important role in energy provision in Jordan is played by National Electrical Power Company (NEPCO) is owned by the government and is primarily responsible for transmission and electrical control, energy purchase and sale, and the exchange of electricity with neighbouring countries.⁷⁶ According to the General Budget Department, NEPCO had a budget deficit estimated at JD 201 million in 2021, and it is expected to reach JD 409 million in 2022, or 1.2% of GDP. This concludes the deficit is increasing and NEPCO's debt is growing (15% of Jordan's GDP). Despite this spending, electricity prices in Jordan are high compared to neighbouring countries.⁷⁷ According to the World Bank, Jordan is ranked 37 out of 213 countries in terms of prices.⁷⁸ In Amman, the distribution of electricity to households is managed by the Jordan Electric Power Company (JEPCO), which sells electricity according to tariffs set by the government.

Recently, the government has announced a plan to reorganize the electricity tariff system and address some of the distortions in the electricity sector. The plan includes subsidizing energy provision for households using block tariff schemes, supporting the renewable energy transition through tax and customs exemptions for all renewable energy products, and introducing a new tariff rate on 1 April 2022.⁷⁹

The plan assumes that electricity prices for businesses (especially for industry, agriculture, commerce, hotels, private hospitals, and TV and radio) will decrease by 6.6%. Households will be classified as subsidized or unsubsidized, with the subsidized including Jordanians and

74 Jordan's Way to Sustainable Development; First National Voluntary Review on the Implementation of the 2030 Agenda, The Hashemite Kingdom of Jordan (2017).

75 The Amman Climate Plan (a vision for 2050 Amman), Ministry of Environment & GAM (2019).

76 NEPCO Annual Report (2020).

77 Impacts of Jordan's New Electricity Tariff Reform (Unpublished), UNICEF & GAM.

78 Doing Business Data Archive, World Bank (2020).

79 Impacts of Jordan's New Electricity Tariff Reform (Unpublished), UNICEF & GAM.

residents from the Gaza Strip, while unsubsidized will mainly include foreigners.⁸⁰ In effect, electricity costs will be subsidized for Jordanian households with low and medium consumption, while the average bill for unsubsidized households will increase by 79%.⁸¹

total residential electrical energy use per capita was 787.8592 kilowatt hours (kWh) (Figure 16). Households consume around 46% of total electricity, industries 22%, the commercial sector 15%, water pumping 15%, and street lighting 2%.⁸⁴ In 2016, the energy consumption of public buildings was 275.82 kWh per square metre (Figure 17).

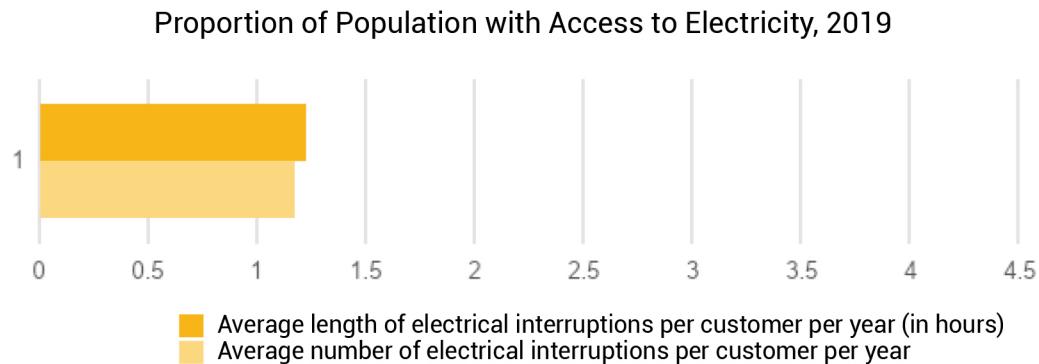


Figure 14. Proportion of Population With Access to Electricity (2019); Source: AUO (WCCD)⁸¹

The vast population of Amman's residents have access to electricity with minimal electrical interruptions. The average length of electrical interruptions in Amman was 1.21 hours per customer per year in 2021, whereas the average number of electrical interruptions per customer per year was 1.23 hours in 2021 (Figure 14).

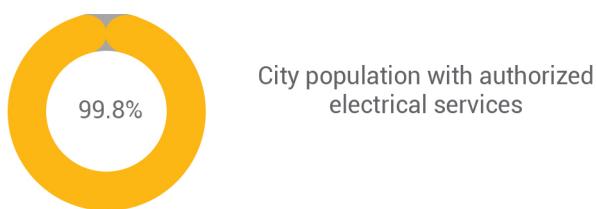


Figure 15. Percentage of City Population With Authorized Electrical Services (2019); Source: AUO (WCCD)



Figure 16. Total Residential Electrical Energy Use per Capita (2019); Source: AUO (WCCD)

80 Ibid.
81 Ibid.
82 AUO (WCCD), (2019).
83 Ibid.
84 Amman Spatial Profile, UN-Habitat (2022).

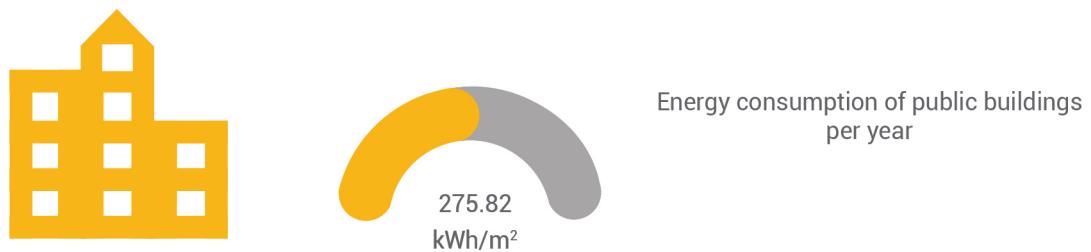


Figure 17. Energy Consumption of Public Buildings per Year (2016); Source: AUO (WCCD)

Access to energy for vulnerable groups and Syrian refugees

The influx of Syrian refugees has affected access to public infrastructure and services in Jordan, especially in the energy sector. The government is working to ensure equal access to electricity for all, including vulnerable groups and Syrian refugees, and has developed measures to mitigate the impact of the crisis. These including provision of electricity at a subsidized price, increasing awareness of electricity consumption, introducing energy-saving interventions and renewable energy projects in Syrian refugee camps, and equitable distribution of electricity for refugees at the Al-Azraq camp. As part of the government's plan to regulate electricity tariffs during the first third of 2022, 26,000 Syrian refugees will be provided with electricity at a subsidized price for six months.⁸⁵

The government is working towards diversifying energy sources, reducing the carbon intensity of its energy systems, and promoting renewable energy, contributing to the fulfilment of the Intended Nationally Determined Contributions (INDCs) under the Paris Agreement. Similarly, GAM is working on enhancing the resilience and efficiency of energy systems and buildings.⁸⁶

GAM is also leading the implementation of Amman's Green City Action Plan.⁸⁷ The plan focuses on developing resilient and efficient energy systems; increasing renewable energy supply by 25% by 2030 by more than 2.5 megawatts (MW); diversifying energy sources to reinforce the energy self-reliance of the city and the country; and reducing the demand for energy by 15% by 2030 through improving the

energy efficiency of buildings and electrical systems.

According to the Green City Action Plan, GAM and the Jordan Electric Power Company will establish large grid-scale solar farms with capacities of 20 megawatts and 50 megawatts, to be delivered in 2026. The project is expected to be delivered via a public-private partnership (PPP) and the capital expenditure is estimated at between 26 million and 65 million Euros, to be covered by the municipal budget, international financial institutions, and the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) for impoverished communities (see Annex 9 for more information about international cooperation projects in Amman).

⁸⁵ MoPIC. The mean expenditure per capita for electricity for refugees living in Amman is JD 4.83 monthly. Vulnerability Assessment Framework, Action Against Hunger & UNHCR (2019)

⁸⁶ Amman Green City Action Plan, AECOM (2021).

⁸⁷ Amman Green City Action Plan, AECOM (2021).

In the cultural context of Jordan, women assume more household responsibilities and therefore may have clearer insights into the impacts of climate change on their communities, or a deeper understanding of the potential benefits of electricity generation from renewable energy sources.⁸⁸ They are also the main group exposed to efficiencies and inefficiencies of energy provision, as they cope with the shortages of water, energy, and waste management in households. The efforts to tackle climate change from a gender perspective are highlighted in the Jordan National Adaptation Plan, which is currently being developed, and the Climate Change and Gender Analytical Report, which is also under development and will be the first of its kind in the region.

As of 2015, only 30% of engineering graduates in Jordan were women, and only 3% of workers in the Middle East and North Africa's (MENA) oil and gas sector were women. Fewer women perform technical roles in the energy sector in comparison to men, both in Amman and across Jordan more broadly. Renewable energy and environmental sustainability therefore represent not only an emerging opportunity for all Jordanian entrepreneurs looking to meet the country's unique energy needs, but an opportunity for women to transcend societal barriers that block their entry into the workforce.⁸⁹

2.2.2.2 Renewable Energy

Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy

Improving the share of renewable energy sources in the national grid is an important goal for both the national government and for GAM. In 2018, only 8% of total energy consumed in Jordan was sourced from renewable energy sources, while the majority of the energy consumed (54%) was sourced from crude oil (Figure 18). In 2019, the share of renewable energy in total energy consumption had decreased to 6%.⁹⁰

GAM is aiming to move to renewable sources by 2050⁹¹ by decentralizing renewable energy provision and increasing reliance on municipal renewable energy sources. It is also aiming

Primary Energy Consumption, 2018

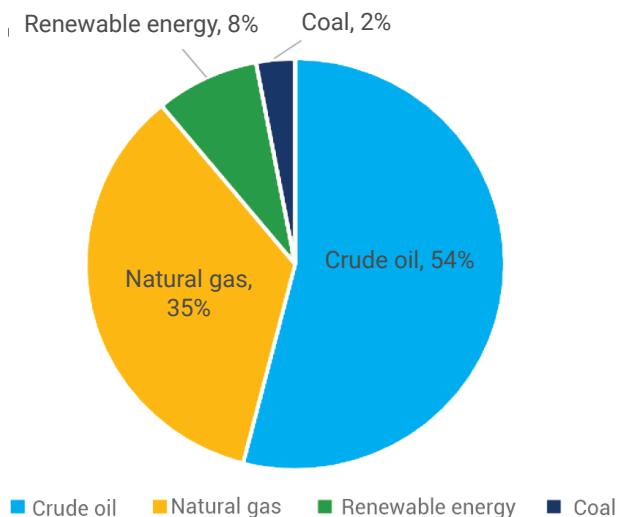


Figure 18. Primary Energy Consumption (2018);
Source: The Ministry of Energy and Mineral Resources

88 Regional Initiative for Promoting Small-scale Renewable Energy Applications in Rural Areas of the Arab Region, UNESWA (2020).

89 Renewable Energy and Gender Equality Tackled in Amman Conference, Wamda (2015).

90 AUO (WCCD), (2019).

91 The Amman Climate Plan (a vision for 2050 Amman), Ministry of Environment & GAM (2019).

to decrease the level of GHG emissions from stationary energy sources and buildings.

Jordan's solar and wind energy sector powered almost 11% of total electricity production in 2018, and this is expected to increase to 30% by 2022.⁹²

In recent years, the national government has established a range of regulations that also lay the groundwork for Amman's transition towards renewable energy. Renewable energy targets are included in the Renewable Energy and Efficiency Law, which promotes renewable energy production. In 2018, the government developed a policy allowing public institutions to build and own a solar photovoltaic (PV) plant with a capacity of up to 10 megawatts. Finally, under the Renewable Energy and Efficiency Law, net metering regulations allow individuals and municipalities to connect renewable energy back to the grid.⁹³

In parallel, GAM has set up incentive schemes and projects that support the city's sustainable energy transition through reducing energy costs for households and businesses, improving air quality (see the section on SDG 3), reducing GHG emissions (see the section on SDG 13), and lowering reliance on imported fuels. These projects focus on investing in large-scale solar projects, integrating LED lighting systems into municipal street lighting, installing rooftop solar units on GAM-owned municipal buildings, developing solar generation farms to power GAM's municipal sites, exploring the possibility to purchase renewable power agreements for providing renewable energy for municipal use, and creating awareness of green building programmes to encourage the use of increasing renewable energy production.⁹⁴

One renewable energy resource for Amman is the biogas extraction project at Al Ghabawi landfill, which extracts methane gas for the purpose of generating power. The project generates around 4.8 megawatt hours (MWh) and will be expanded to 7.5 MWh during 2023-2026.⁹⁵ The project is expected to reduce the financial burden by saving about JD 5 million annually, equivalent to 40% of the electricity bill.⁹⁶

2.2.2.3 Energy Efficiency

Target 7.3: By 2030, double the global rate of improvement in energy efficiency

The national government of Jordan is strongly committed to improving energy efficiency. The Second National Energy Efficiency Plan (2017) of Jordan put in place a target of a 20% improvement in energy efficiency by 2020. The enforcement of building codes and the existence of guidelines for building codes and green buildings are necessary to accelerate this transition.

Amman is facilitating a number of projects that address residential, commercial, and public building energy efficiency standards.⁹⁷ In 2018, per capita consumption of electricity in Amman was 1,701 kWh, in comparison to 2,310 kWh in 2014 (Figure 19). According to the Amman Urban Observatory (World Council on City Data), the total electrical energy use per capita in 2020 was 1,866 kWh.⁹⁸

The improvement of energy efficiency in buildings will ensure a positive economic and social impact for the economy. Building retrofits will potentially provide a 150%

92 Jordan's Way to Sustainable Development; First National Voluntary Review on the Implementation of the 2030 Agenda, The Hashemite Kingdom of Jordan (2017).

93 The Amman Climate Plan (a vision for 2050 Amman), Ministry of Environment & GAM (2019).

94 Ibid.

95 BIOGAS Project, GAM, not published, correspondence via email.

96 Jordan News Agency (2019).

97 Ibid.

98 AUO (WCCD), (2019).

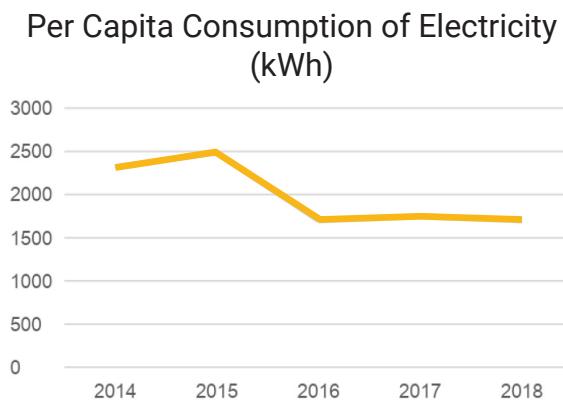


Figure 19. Per Capita Consumption of Electricity (kWh); Source: The Ministry of Energy and Mineral Resources, 2019

increase in jobs in Amman by 2030, according to the Global Covenant of Mayors for Climate and Energy Opportunity Dashboard.⁹⁹

A UNDP project is underway to assist GAM to improve the quality of life for its citizens and comply with the National Energy Efficiency Action Plan (NEEAP) via support for more sustainable, resource-efficient urban planning and targeted low-carbon interventions in municipal buildings and street lighting sub-sectors. The SURE project addresses the application of building energy codes and the thermal insulation code. In addition, the project has been designed and conceptualized to provide the opportunity to scale up the implementation of thermal insulation in new and existing buildings in GAM and other cities in Jordan (see Annex 9 for more project examples).¹⁰⁰

Moreover, various actions are in process to increase energy efficiency in the building sector. The projects will provide sustainable benefits in reducing energy costs for Amman, improving the living environment, and boosting the perception of green building through awareness programmes. These activities include creating a building energy rating and label programme, increasing participation in

green building incentive programmes, putting in place an energy efficiency engagement plan for major energy users, incentivizing the adoption of building codes and retrofit guidelines, and implementing green building strategies in city-wide programmes.¹⁰¹

2.2.3 Implications for Policy and Practice

In light of the volatility in fossil fuel prices, the insecurity of the energy supply, and the rising demand driven by population growth, it is more important than ever that further investment is made in Amman's green and efficient energy sector. Local governments should prioritize developing and testing innovative approaches to energy transformations, resting on diversified energy sources, public participation, and the principle of equality together with its various partners, such as UNDP and the EBRD, and on developing new partnerships that put people at the heart of this transformation. Schemes incentivizing the development of housing and green buildings, such as density bonuses, are encouraged. GAM should also incentivize energy-efficient behaviours and choices by the public and private sectors through promotional campaigns and by building on good practices in energy efficiency and green energy production and consumption, which will reduce the city's environmental footprint and ultimately improve residents' overall quality of life.

Amman could also benefit from enhanced measuring and monitoring of energy efficiency targets at the local level, which is currently lagging behind the national level, and enhanced participation in the formulation and implementation of the country's energy policies and the sectoral policies that hold a particular reference to energy performance: buildings, transport, industry, and others.

99 The Global Covenant of Mayors for Climate and Energy Opportunity Dashboard, GCMCE (n.d.).

100 SURE Project, UNDP (not published), correspondence via email.

101 The Amman Climate Plan (a vision for 2050 Amman), Ministry of Environment & GAM (2019).



Figure 20. Ghabawi Landfill, Amman (Source: GAM at Facebook, https://www.facebook.com/cityofamman/videos/2094235880906839/?extid=NS-UNK-UNK-UNK-IOS_GK0T-GK1C&ref=sharing, accessed 26/09/2022)

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



2.3 SDG 9: Industry, Innovation and Infrastructure



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

2.3.1 Highlights



There is limited statistical data on Amman's progress towards achieving the targets under SDG 9. That being said, existing data shows that industrial development is a major force behind the city's economic growth, given that Amman is home to 80%¹⁰² of the country's industry, and industry is the source of 55% of the city's total employment. The city attracts 80% of the foreign direct investment flows into Jordan. Estimated GDP per capita in Jordan was \$4,283 in 2020¹⁰³ and it is generated by the industrial, services, tourism, mining, and

agricultural sectors¹⁰⁴. The SDG 9 review below shows that Amman's industrial development is driven by Small and Medium-sized Enterprises (SMEs), which represent 99.4% of the city's industrial base. A range of measures have been introduced by the national government to support SMEs, including establishing a credit bureau, launching export and loan guarantee programmes, opening up new markets for Jordanian products, and introducing new legislation related to insolvency, bankruptcy, and liquidation.

Amman faces a range of socio-economic challenges related to increased urbanization and the influx of migrants to the labour market, which has limited the amount of job opportunities and led to an increase in poverty rates¹⁰⁵. Although the city has the lowest unemployment rate in the country (24.8% in 2021), the unemployment rates of women and young people are of concern, as they are significantly higher than those of men or of older

102 Jordan National Urban Policy, UN-Habitat (2022).

103 GDP Per Capita (Current USD) - Jordan, World Bank Group (2022).

104 Amman Green City Action Plan, AECOM (2021).

105 Mainstreaming Local Economic Development into Jordan National Urban Policy Thematic Guide, UN-Habitat (2021).

cohorts. Amman is home to higher education institutions that provide access to affordable technical talent in the ICT sector. This sector is growing rapidly, generating revenues of \$2.3 billion in 2018, an annual increase of 5%.¹⁰⁶ This sector's growth is associated with the potential development of sustainable and resilient urban infrastructure in the city that will further support its economic growth.

2.3.2 Target Review



2.3.2.1 Infrastructure and Urban Resilience

Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

Amman has implemented a range of actions to deliver high quality, sustainable and resilient infrastructure. In 2017, the Amman Resilience Strategy was launched, aiming to improve mobility and connectivity and encourage innovation in the service of building a sustainable city.¹⁰⁷ The strategy focused on the following:

- Developing an integrated mobility plan (see the section on SDG 11) and planning and constructing a metro system in the city;
- Identifying and implementing energy-saving solutions for municipal assets (e.g. buildings, streets, public spaces);
- Developing solar power generation facilities (see the section on SDG 7);

- Incentivizing implementation of building codes and guidelines;
- Improving the solid waste management system (see the section on SDG 13);
- Establishing waste-to-energy facilities.

Sustainable water management is one of the major resilience challenges Amman faces, particularly as it is expected that industrial water consumption will increase due to a rise in industrial activity. The city's efforts to capture, retain, and re-use water at the level of households, businesses and neighbourhoods, will play a critical role in making Amman more resilient.¹⁰⁸ Amman is also facing challenges related to flash floods (see the section on SDG 13) which require investment in resilient infrastructure to protect assets, businesses, and people from future risks that are expected to be exacerbated by climate change.

106 Information Technology in Jordan, Ministry of Digital Economy And Entrepreneurship (MODEE) (2018).

107 Amman's Resilience Strategy, 100 Resilient Cities & GAM (2017).

108 Amman Green City Action Plan, AECOM (2021).

2.3.2.2 Industrial Development and Employment

Target 9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise the industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

Industry is one of the contributors to economic growth and employment in Jordan, contributing 23.5% of GDP and employing 250,000 people at 17,000 enterprises across the country in 2022. Four major industrial sectors include transformative industries, extractives, water, and electricity. Industry also plays an important role in limiting poverty and addressing employment and equality challenges, with 20% of the industrial labour force nationally being female.¹⁰⁹

According to the Department of Statistics, manufacturing accounted for 10% of employment in 2018. Other major employment sectors included public administration (18.5%), wholesale and retail trade (16.7%), and education (10.3%) (Figure 21)¹¹⁰

Jordan's industrial growth was at its peak between 2010 and 2015 due to strong interest from foreign investment, with 85% of financing at that time channelled towards the sector's development. In this period, the quality of production in Jordan was very competitive, which made it accessible to more than 120 markets worldwide, making up more than 90% of national exports. In 2011, in order to accommodate and support this industrial expansion, the local government successfully developed a long-term land-use master plan for Amman, including an Industrial Lands Policy (ILP). The policy has identified the following areas in the city with appropriate infrastructure, environmental absorption capacity, and access to markets to accommodate new and existing industries for decades to follow, namely Sahab, Al Muwaqqar Industrial Area, Al Qastal Industrial Area, and Al Jeezah Industrial Area.

Findings from the 2018 Census of Establishments indicate that the majority of businesses in Jordan were located in the capital governorate, where Amman is located (74,877), followed by Zarqa (24,416), Irbid (26,145), and Balqa (11,291) (figure 22). In addition, 84.34% of businesses with a declared capital of more than approximately JD 500,000 were concentrated in the capital governorate,

Distribution of Employed Households by Economic Activity

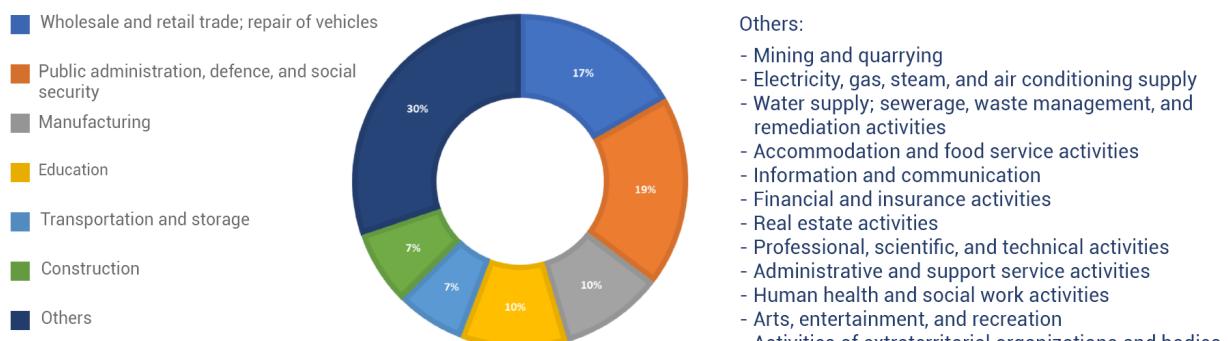


Figure 21. Census of Establishments, 2018

109 The Voluntary National Review of Jordan, Version 16/04/2022 (Unpublished).

110 Department of Statistics, (2018).

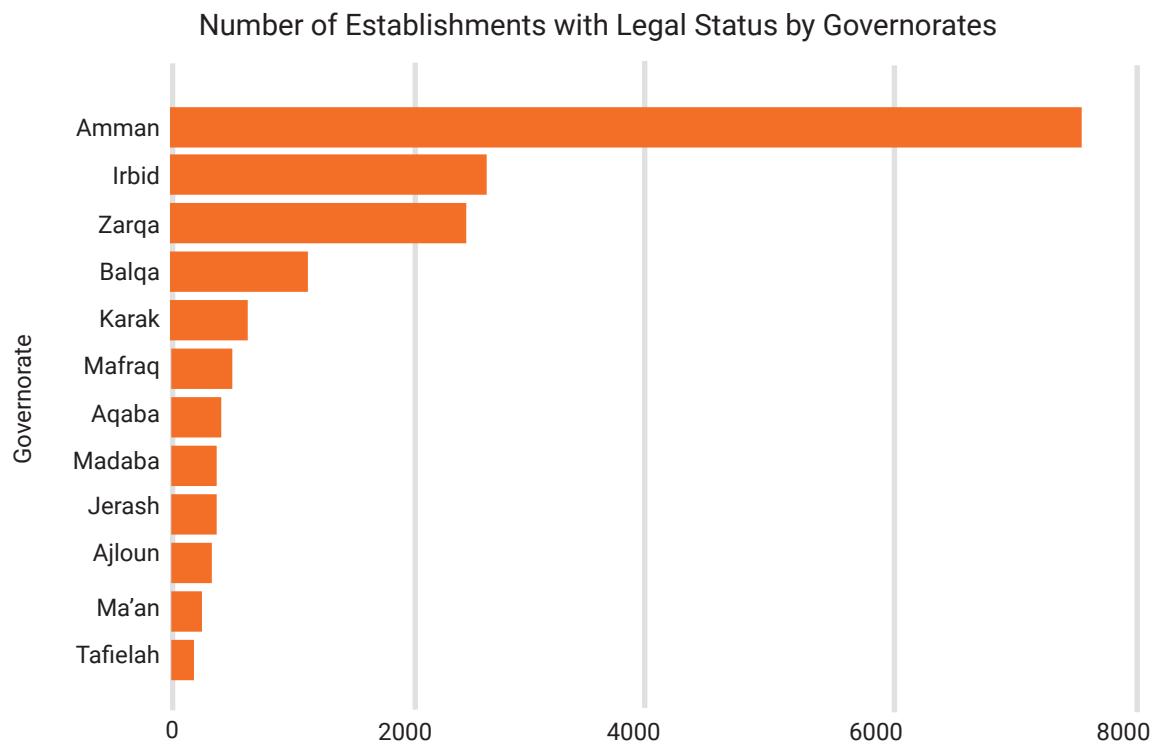


Figure 22. Number of Establishments with Legal Status by Governorates. Source: Census of Establishments, 2018

followed by Zarqa at 6.29%, Irbid at 3.14%, and Aqaba at 2.42%.

Today, the city of Amman faces a number of resilience challenges, categorized as acute shocks (e.g. economic crisis, terrorism, drought) and chronic stresses (e.g. high energy costs, water shortage, lack of natural resources, urbanization) which have a direct

effect on the development of the industrial sector and are associated with many socio-economic challenges, such as growing unemployment and poverty.¹¹¹ Data from 2021 shows the unemployment rate had increased to 24.8%, 22.6% among men and 30.3% among women,¹¹² compared to 15.28% in 2015, or 13.32% among men and 24.12% among women.

Refugees and employment

The majority of refugees are employed in the informal economy, and many work in close proximity to their place of living. According to GAM, approximately 55% of informal jobs are in the food and beverage sector or the fabric/garment sector. Recent legislative changes mean that Syrian refugees will now receive identity cards, helping them to access the formal job market. However, refugees are competing for jobs with 390,000 Egyptian workers and 140,000 Asian domestic workers.¹¹³

111 Amman Resilience Strategy, 100 Resilient Cities & GAM (2017).

112 Jordan Support to Private Sector Employment and Skills, World Bank Group (2021).

113 Amman Spatial Profile, UN Habitat (2022).

The Jordan Response Plan developed by the government takes a proactive role in responding to the impact of the Syrian crisis. One of the policies adopted allows for the formal participation of Syrian refugees in work, resulting in over 220,000 work permits issued. The government's policy changes have enabled the establishment of home-based businesses by Syrian refugees both inside and outside refugee camps, resulting in around 49 Syrian-owned and home-based businesses nationwide.¹¹⁴

2.3.2.3 Support for SMEs

Target 9.3: Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

SMEs are diverse in their ability to create jobs, as well as to help to reduce poverty and disparities. However, SMEs in Jordan face a number of challenges, the most significant of which is access to finance. This challenge is especially acute for women-owned and women-led SMEs.¹¹⁵ Although the market has failed to provide official funding to SMEs, the government increased bank loans granted to SMEs from 10% to 20% from 2016 to 2019, in an attempt to ease SMEs' access to finance.¹¹⁶ Measures are in place to ensure that female entrepreneurs are able to access financing from banks and equity funds: a 10% annual increase in the number of loans extended to female-owned and managed SMEs (from 556 loans in 2013 to 900 in 2018), increased capacity of female entrepreneurs to secure formal debt and equity financing and others.¹¹⁷

The government has also implemented a number of measures to actively support SMEs, namely by establishing a credit bureau, launching export and loan guarantee programmes, opening up new markets for Jordanian products, and introducing new legislation related to insolvency, bankruptcy and liquidation. Additionally, GAM has improved the legal framework for planning business licensing affecting SMEs, which will come into force in August 2022.¹¹⁸ One of the main highlights of this law is to encourage the growth of small businesses by reducing licensing fees and encouraging businesses from home.

In order to further support SMEs and enhance the quality of products and services through innovative and technological approaches, the Higher Council for Science and Technology has established the National Fund for Enterprise Support (NAFES). The fund assists Jordanian SMEs by providing financial support to management development projects aimed at enhancing efficiency and competitiveness, per Jordan's Economic Growth Plan 2018-2022. To support market competition and policy formulation, the government also established an industrial observatory which provides an integrated database focused on the industrial sector.¹¹⁹ To address the funding gap in

114 Ibid.

115 Primary data collected provided by UN Women (2022).

116 SME Policy Effectiveness in Jordan: User Guide 2: Effective Monitoring and Evaluation of SMEs, OECD (2019).

117 Ibid.

118 Law of Licenses for Professions within the borders of Greater Amman Municipality, Amman Chamber (2022).

119 Jordan Economic Growth Plan 2018-2022, The Economic Policy Council (2017).

women-owned SMEs, private-sector funds have been established, among them Amam Ventures, a Women's Empowerment Principles (WEPS) signator.¹²⁰

LevelUP is a multi-component UNIDO industrial development project aimed at creating decent job opportunities for women and young people, including through self-employment, and at supporting the inclusive and sustainable industrial development of the country, in accordance with the Jordan 2025 Economic Development Plan.¹²¹ LevelUP was launched in 2019 and is ongoing. It focuses on three industry value chains, namely fashion, natural cosmetics, and phytopharmaceuticals (see Annex 9 for more information).

SMEs constitute a large share (99.5%) of total economic establishments in the country, indicating the positive impacts of the existing sectoral support measures.¹²² Additionally, according to GAM, there were 0.6001 new patents per 100,000 inhabitants registered in Amman in 2020. Jordan now ranks 49th on the Global Entrepreneurship Index (GEI) and has more than 25 business incubators, accelerators and creative centres.¹²³

2.3.2.4 Growth of ICT Sector and Economic Advantage

Target 9.c: Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in the least developed countries by 2020

Jordan has succeeded in creating and developing a highly competitive and pioneering ICT sector which currently serves larger regional markets, contributing significantly to the country's increasing globalization. The ICT sector is the fastest growing in the Jordanian economy, with total revenues of \$2.3 billion in 2018, a 5% increase from 2017. As of 2018, the sector employs 22,413 people, with men making up 67% of the workforce and women 33%.¹²⁴ There are 400 companies in Jordan operating across the sector, in areas including telecoms, information technology, online and mobile content, and video game development. In addition, Amman serves as a hub and an incubator for a significant number of ICT initiatives.¹²⁵

According to the Amman Urban Observatory, 85% of Amman's population is subscribed to mobile broadband services. This comprehensive coverage supports access to information and education for all. However, fixed internet broadband subscriptions are available to only 3.9% of the city's population. More information is provided in (Table 2).¹²⁶

120 Women-led SMEs, Amam Ventures (2022).

121 Advancing Jordanian industry, Level UP (2022).

122 Jordan Chamber of Industry.

123 Jordan - Information and Communication Technology, International Trade Administration (2021).

124 Information Technology in Jordan, MODEE (2018).

125 The Arab World's Top Content Creator takes on Innovation, The Business Report (2018).

126 Amman Spatial Profile, UN-Habitat (2022), p. 40.

Table 2. Cell Phone, Landline, and Internet Connections

AUO	Number of cell phone connections	per 100,000 population	100,099	2016
	Number of internet connections	per 100,000 population	9,825.4072	2020
	Number of landline phone connections	per 100,000 population	5,031.9808	2020

Source: AUO (WCCD)

According to the Digital Transformation Strategy 2021-2025, in light of the limited natural resources in Jordan, human capital is relied on to promote economic growth. More than half of the population in Amman is under 25 years old, which increases demands on educational facilities¹²⁷ but also poses significant opportunities for a rapid shift towards digital transformation. This new development paradigm encourages the adoption of digital transformation,

entrepreneurship, and innovation and fosters digital skills and digital literacy among all sectors of the community.¹²⁸ As a result, GAM established the Creative Women Hub to train and empower women in Amman to acquire the necessary capabilities in the field of ICT and e-marketing.¹²⁹

Vocational training and refugees

Launched in 2020 with funding of up to JD 140 million, the Youth, Technology, and Jobs Project (YTJ) aims to capitalize on Jordan's potential to grow its digital economy and absorb skilled labour. By 2024 it will provide professional skills programmes to 30,000 young people, a technology curriculum in public schools for Grades 7 to 12, and workspaces in underserved communities. The project will also support access to markets for entrepreneurs and incentivize businesses to expand their operations in underserved communities. It will also improve youth access to freelancing platforms and improve government digital services and digital payments. The project aims to generate 10,000 new income opportunities for young people in the coming five years, including women (30%) and Syrian refugees in freelance opportunities (15%). It also aims to digitize more than 80% of government payments and mobilize around \$20 million in new private sector investments in digital services.¹³⁰

127 Estimated population of 2020 and some of the selected data, Department of Statistics, (2020).

128 The National Digital Transformation Strategy and Implementation Plan, 2021-2025, MODEE (2021).

129 Women's Creative Hub, (2020-2022).

130 Jordan: US\$200 million to improve digital services and access to jobs for youth and underserved communities, World Bank, (2020).



By promoting digital transformation, Jordan aims to ensure a more sustainable and connected environment for the future. Amman also aims to become a smart city, meaning it will play an important role in deploying digitalization and technological innovations, such as electronic data collection sensors and cloud-based data integration, to manage infrastructure assets and improve operations in urban areas. In 2019, GAM, in partnership with CDM Smith (private sector engineering and construction firm) and USTDA (United States Trade and Development Agency), developed a Smart City Roadmap that harnesses the latest innovations in artificial intelligence and big data to solve the city's urban planning needs. The roadmap aims to improve service provision for local underserved populations and to reduce traffic congestion through the facilitation of a better transportation system around Amman (see the section on SDG 11 for a transportation system review).¹³¹ In line with the Digital Jordan 2025 Strategy, the road map seeks to increase the use of electronic services and automate government procedures in a number of ministries and government institutions, to achieve transparency and increase the effectiveness of government services. As of 2022, GAM has transformed many of its municipal services into electronic services.

In 2020, Jordan was ranked 53 out of 63 countries on the Smart City Index of the Global Digital Competitiveness Report, which measures the capacity and readiness of 63 economies to adopt and explore digital technologies as a key driver for economic transformation in businesses, government and wider society. Jordan has made improvements on some of the indicators, such as the availability of capital for the digital world, talents, the technology domain, and scientific concentration.¹³²

2.3.3 Implications for Policy and Practice



The above review of the targets under SDG 9 shows that the sustainable industrialization of Amman, linked to the success of national macroeconomic policy and the delivery of environmental, social and urban goals, will lay the ground for green growth in both the city and the country at large. It flags the importance of ensuring equal access to the labour market for both women and young people. It indicates that urban policies and their instruments can be used to drive green growth of the city and the country by ensuring sustainable urbanization, access to resilient and climate-proof urban infrastructure, and provision of services that were limited throughout the COVID-19 pandemic (see Chapter 3).

The National Urban Policy of Jordan, which is currently being developed, is particularly important here, as it will provide a blueprint for smart and resilient urban development that is grounded in compact, self-reliant and diverse 24-hour neighbourhoods. These neighbourhoods will be centred around people and serviced by green and efficient public transport infrastructure and services, and built on the natural and cultural assets of Amman and Jordan.¹³³

With the ICT sector developing rapidly in Jordan, and the third biggest contributor to GDP, it has the potential to become one of the main drivers of Amman's sustainable growth. The sector can help foster public sector modernization and provision of smart infrastructure (e.g. smart building and smart transport), e-services and data collection. It can also provide support for evidence-based policymaking.

¹³¹ Meeting urban challenges in Amman with a Smart City plan, CDM Smith (2020).

¹³² Jordan Drops in Smart City Ranking, The Jordan Times (2020).

¹³³ Jordan National Urban Policy Review, UN Habitat (2022), p. 10.

Nevertheless, achieving the vision of Amman as a smart and sustainable city requires creating the right policy, regulatory and administrative conditions, and putting in place financial frameworks that facilitate the development and implementation of socio-technological, ICT-driven innovation across different sectors.



Figure 23. Abdoun Bridge, Connecting East and West Amman (Source: GAM, 2022)



2.4 SDG 11: Sustainable Cities and Communities

Make cities and human settlements inclusive, safe, resilient and sustainable

2.4.1 Highlights

The following review of the targets under SDG 11 outlines the urban context of Amman and the challenges it faces in relation to access to resources, fast-paced urbanization, and rapid population growth. The review looks at the characteristics of the housing sector in Amman and notes the 23% housing vacancy rate in 2018,¹³⁴ the limited access to decent and affordable housing, especially for vulnerable groups, and the projection percentage of people living in informal housing (figure 24).¹³⁵

The review also summarizes the public transport situation in Amman. Petrol-fuelled private vehicles are the primary mode of

transportation, which increases environmental pollution and poses health risks (which are also discussed in the section on SDG 3). In addition, women's access to public transport is limited. In terms of waste management, although 97% of the population in Amman is covered by the municipal solid waste collection services, GAM has yet to expand the practice of sustainable municipal solid waste management to increase the proportion of waste that is sorted and recycled from 3%.¹³⁶ Air quality, affected by GHG emissions from residential buildings and transportation, is measured using Jordanian quality standards, which have lower benchmarks than international standards, e.g. WHO standards. There is very limited access to green and open public spaces in Amman, with 31.8 hectares of green area per 100,000 population in 2020. This negatively affects residents' quality of life and the city's social cohesion and integration, and also increases risk of environmental hazards such as flooding and soil pollution.

134 Ibid.

135 See Annex 1, the Statistical Annex

136 Amman Spatial Profile, UN-Habitat (2022), p.100

2.4.2 Target Review



2.4.2.1 Housing Sector

Target 11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

According to the national Department of Statistics' Household Expenditures & Income Survey from 2017, 60.4% of housing units in Amman are owned, 30.8% are rented, 6.2% are occupied for free, and 2.6% are occupied in return for work.¹³⁷ Currently, the demand for housing in the city amounts to 28,088 units, and it is expected to reach 30,092 units in 2025,¹³⁸ as Amman's population is expected to

grow by more than 2 million people in less than five years.¹³⁹

According to Governorate Land Registration Directorates (LRDs) in Amman, there was a slight decrease in the size of Amman's real estate market from 2012 to 2018 (Figure 25). However, on the national scale, Amman continues to have the biggest real estate market.¹⁴⁰

The real estate market in Amman can be characterized by a mismatch between supply and demand; inflation in land, construction, and energy prices; the absence of taxation on vacant land; and imbalances in the provision of diverse housing stock. Affordable housing in Amman is limited, and with growing demand induced by the influx of migrants, the issue has become critical.

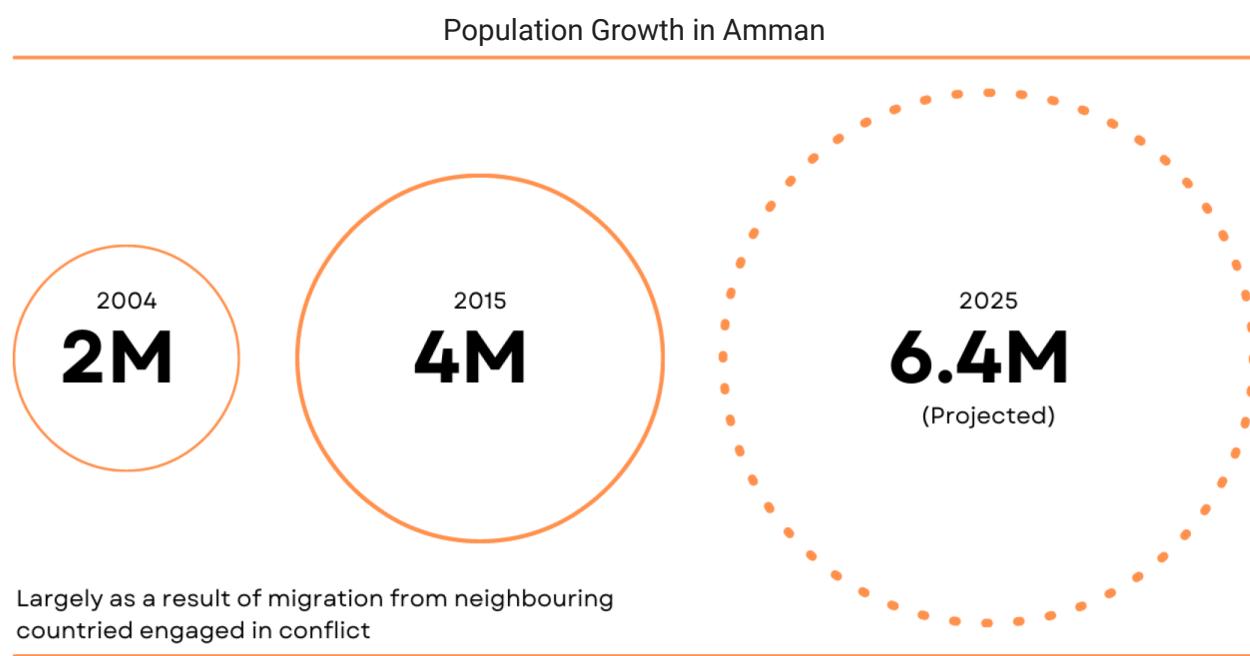


Figure 24. Population Growth in Amman. Source: Amman Resilience Strategy, 2017

137 Amman Spatial Profile, UN-Habitat (2022) p. 64.

138 Geographic Multidimensional Vulnerability Analysis – Jordan, UNICEF (2020), p.155.

139 Jordan Housing Sector Review, World Bank Group (2018), p. 2.

140 Amman Spatial Profile, UN-Habitat (2022) p. 58.



Amman Governorate LRDs

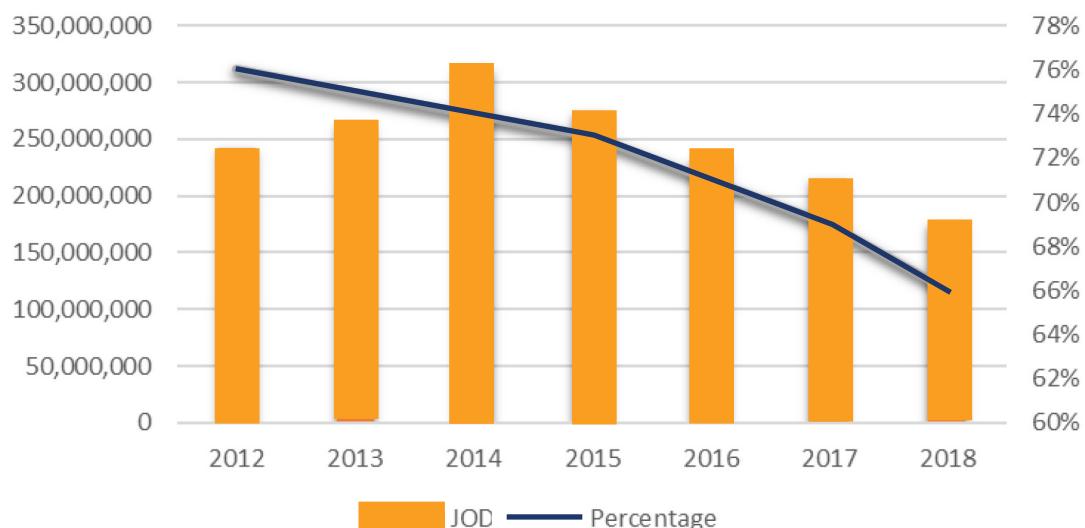


Figure 25. Amman Governorate LRDs. Source: Department of Land and Survey, 2012-2018

In the past decades, zoning regulations in Amman have limited the land available for affordable housing by allowing a generous minimum plot size, encouraging developers to produce larger housing units (120-200 square metres). This has led to an oversupply of housing stock that is not necessarily linked to market demand. At current real estate market prices, only 10% of households can afford to buy houses above 100 square metres without spending more than 30% of their monthly income.¹⁴¹ High vacancy rates, such as in Amman (23% in 2018), can indicate of housing market stagnation.¹⁴² The Housing and Urban Development Corporation (HUDC) is responsible for providing housing for Jordan on public-owned land.

In 2017-2018, in partnership with the World Bank, Amman developed and discussed multiple scenarios to promote urban growth,

one of which assumes that a reduction of the housing vacancy rate in Amman to 8% is possible using guarantees to landlords, which would prompt the subdivision of large vacant apartments for the rental market. Thus, instead of building new dwellings on the outskirts of the city, about three quarters of the expected population growth of the city could be housed in 141,238 existing but empty homes in Amman by 2030.¹⁴³

Although rental affordability is better than ownership affordability in Amman, with the average household income of JD 576 per month, rent expenses still constitute more than a third of the average family income.¹⁴⁴ At an average rent of JD 142 per month (Figure 26), 30 to 40% of households in Amman can only afford rent below the market average, particularly, in the western part of the city.¹⁴⁵

141 Ibid, p. 21.

142 Ibid.

143 Amman, Jordan. Comprehensive Climate Plan, World Bank Group (2020).

144 Jordan Housing Sector Review, World Bank (2018), p. 32.

145 Ibid, p. 35.

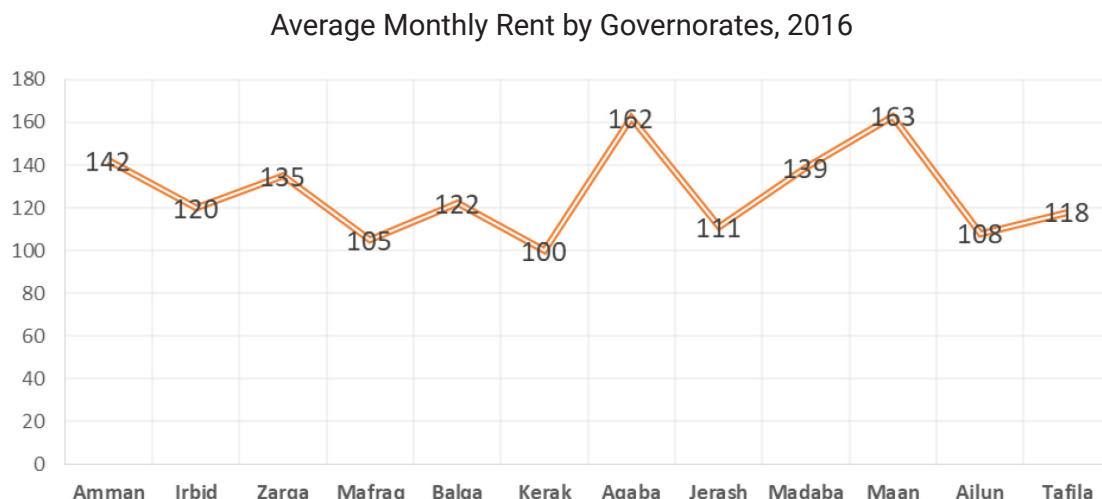


Figure 26. Average Monthly Rent by Governorates, 2016. Source: World Bank, 2018

Jordan's population is highly concentrated in its northern governorates, specifically in Amman, Irbid, Zarqa, and Mafraq. Around 4 million refugees live in Jordan, but only 20% of the refugee population reside in camps. The majority live in urban areas, specifically in the governorates mentioned above.¹⁴⁶ The flow of refugees from camps to urban areas has an adverse impact on infrastructure services.

That being said, there is a lack of integrated planning at the regional level and within governorates. The plans currently developed at the regional level today are structural plans, covering only a few governorates. There is a lack of national support for this level of planning, hence it is often driven by governorate administrations¹⁵⁰ GAM is responsible for but not limited to providing the following urban infrastructure and services: roads, bridges, and

Refugees and access to housing

In Jordan, the housing sector is facing major challenges due to an influx of refugees and population growth. According to the 2015 census, 10% of the population lives in overcrowded conditions, most notably those who cannot legally work to cover rental costs for their own family home.¹⁴⁷ In addition, 43% of non-Jordanian households share apartments. Population growth and the refugee influx have contributed to a 17% increase in rental costs. This has put pressure on Jordanians and refugees to compete for affordable housing¹⁴⁸ The number of homeless people per 100,000 population in Amman stood at 17 persons in 2020, based on data from GUO (UMF).¹⁴⁹

146 Amman Spatial Profile, UN-Habitat (2022).

147 Jordan Affordable Housing Programme Report, UN-Habitat (2015).

148 Amman Spatial Profile, UN-Habitat (2021).

149 See Annex 1, the Statistical Annex.

149 Amman Spatial Profile, UN-Habitat (2022).



underpasses; street lighting and traffic management; refuse removal and disposal; public transport; agriculture; public markets; social and cultural services; spatial planning; economic development; and business licensing¹⁵¹ (see the section below on SDG 9 for a discussion on access to resilient urban infrastructure).

2.4.2.2 Public Transport System Development

Target 11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

buses.¹⁵² 85% of the city's population has access to public transport within a 15-minute walking distance.¹⁵³ Most of the bus stops are located within a 15-minute walking radius, with only a few areas on the outskirts of the city with limited access. Users typically have to take two or three different buses to reach their destination. Amman has transport links with other governorates, including Zarqa, Russeifa, Al-Salt, Ein Al-Basha, Madaba, Sahab and Marj Al-Hamam. The city has two international airports, a railway line that traverses the governorate, and bus routes from Amman to other governorates run by private operators.¹⁵⁴

The development of the public transport system is one of GAM's priorities, as demonstrated by the increased spending on public transport expenditures between 2020 and 2022 (see Table 3).

According to the Amman Spatial Profile, public transport in the city constitutes 13% of the modal share. Of this percentage, 8% of population use taxis and 5% of population

Table 3. Capital Expenditures for Development Projects 1

Capital	2019	2020	2021 (Estimated)	2022 (Estimated)	2023 (Estimated)
Public transport expenditures	5,543,218	4,864,462	7,000,000	16,000,000	8,600,000
Developing public transport (BRT)	23,066,010	32,400,766	35,000,000	N/A	8,600,000
Total	179,884,062	111,295,590	160,134,848	125,910,000	107,201,503

151 Ibid p. 62.

152 Ibid p. 88.

153 Ibid p. 92.

154 Ibid.

Capital	2019	2020	2021 (Estimated)	2022 (Estimated)	2023 (Estimated)
Land acquisitions	29,684,904	18,752,587	50,000,000	20,000,000	20,000,000
Total gross expenditures	420,961,216	293,891,255	432,574,048	363,628,672	347,889,573

Source: Annual General Budget Report in JD, GAM, 2019-202

Development of the public transport system in Amman in the future will rest on:

- Developing an integrated mobility plan to address traffic congestion, the increase in private car use, limited access to mass transportation, and safe pedestrian infrastructure.
- Delivering a premium quality, economically feasible, car-competitive mass transit system for use by all of Amman's citizens, including car owners.
- Setting up an urban mobility observatory to collect smart data to be applied as a basis for an integrated mobility plan to share information, research, and knowledge on urban mobility.

For example, GAM's new Traffic Monitoring Platform involves the development of a real-time, intelligent, open-source big data platform that performs functions such as traffic data ingestion, consumption, dissemination, fusion, aggregation, and visualization, all designed to improve traffic flow.

One of the flagship transport infrastructure development projects administered by GAM is the planned Bus Rapid Transit (BRT) system. Starting in 2008, the project's main goal is to

increase the share of commuters using public transportation from 13% to 25% by 2025.¹⁵⁵ Once completed, the city's first BRT system would allow for high-capacity buses to run exclusively on 32 kilometres of segregated lanes. The Amman BRT is expected to reduce the distance travelled using private vehicles by 85 million kilometres per year and the distance travelled using taxis by 12 million kilometres per year.

In 2019, as part of the public transport system development, GAM has undertaken a large bus fleet expansion at a cost of JD 18 million. The municipality has acquired and deployed a fleet of more than 130 buses, including 15 electric buses, covering 55 destinations and two dozen routes.¹⁵⁶

Currently, the public transportation network in Amman covers most of the densely populated areas of the city, although certain spatial inequalities between the western and eastern parts are present. Public transport infrastructure is also lacking in the newly developed residential areas where medium and low-income households are located. The current public transport network is often seen as underdeveloped, unreliable, and lacking a well-structured hierarchy of transport modes and services.¹⁵⁷

155 Amman: Jordan - Comprehensive Climate Plans, World Bank (2018).

156 Amman Spatial Profile, UN-Habitat (2022), p.113.

157 Public transportation review in the city of Amman, Birmingham University (2021).



The decline in attractiveness of public transport as a travel option has led Amman's residents to depend more on private car use, causing chronic congestion and expanding demand for parking. Other issues facing Amman in relation to transport include a lack of adequate infrastructure (e.g. bus stops and transport hubs), and the absence of integrated and connected transport routes, or a unified payment system for public transport. In 2010, there were 800,000 cars in Amman, and with an annual increase of 8-10%, the number is predicted to reach 2 million by 2025.¹⁵⁸ It is estimated that there are 350 vehicles for every 1,000 people in Amman. That being said, there is a potential to leverage the split share in favour of public transport given that in 2019 49% of commuters in Amman used other travel modes than private (Table 27).¹⁵⁹

Mobility in Amman is rather costly, constituting around 25-30% of a household's income. Users who rely on the public transport system are

often those with an average monthly income of less than JD 400, who typically do not own a car.¹⁶⁰ This causes additional economic stress on families. Low financial returns that do not cover general transportation and difficult access to transportation are seen by Amman's young people as reasons for leaving work or rejecting employment opportunities.¹⁶¹

Public Transportation Review in the City of Amman

In 2019:



Figure 27. Source: *Public Transportation Review in the City of Amman*, Birmingham University, 2021.

Refugees and access to public transport

*In Amman, 40% of employed Syrian refugees spend around JD 1-3 daily on transportation to get to work. Only 2% of Syrians in Amman own a car, while 5% rent one. The lack of financial resources allocated to transport is one of the key factors limiting refugees' access to work opportunities.*¹⁶²

158 Amman Resilience Strategy, 100 Resilient Cities & GAM (2017), p. 42.

159 Amman Spatial Profile, UN-Habitat (2021), p. 88.

160 Amman Spatial Profile, UN-Habitat (2022).

161 Gender in Public Transportation, SADAQA (2018).

162 Amman Spatial Profile, UN-Habitat (2022), p.89

Challenges for women in accessing public transportation are exacerbated for vulnerable women. Women living on the outskirts of urban areas, associated with lower socio-economic status, have less access to transportation. In 2019, according to REACH and UN Women, Syrian refugees who are women spend approximately JD 14 per month on transportation, while Jordanian women spend on average JD 57 per month due to the availability of safer and more expensive routes.¹⁶³

Access to transport infrastructure and services is subject to gender dynamics. According to a study conducted in 2018 by SADAQA, two thirds of public transportation users in Jordan are male and one third are female.¹⁶⁴ In comparison to men, women tend to make shorter trips, or make multiple daytime trips, often carrying packages and accompanying young children, due to traditional gender norms around women's roles. As a result, women's needs during their journeys on public transport are different from men's, with a high emphasis on safety, frequency, comfort, and flexible tariffs that take into account their multiple stops. Existing problems with public transportation include low frequency of trips, lack of information, over-crowdedness, lack of cleanliness, weak complaint and feedback mechanisms, and a high chance of harassment, which particularly affect female travellers¹⁶⁵. The lack of an efficient public transportation system is one of three main structural barriers to entry into the education and workforce for women and as a result, it lowers their standard of living.¹⁶⁶

Recent attempts to mainstream gender into national and local transportation policy are gaining a foothold. In 2021, the Ministry of Transportation adopted the National Framework for Gender Sensitive Public Transport, in partnership with SADAQA and UN Women¹⁶⁷ (see the section below on SDG 17 for

a discussion on partnerships). The framework includes action points to mainstream gender into the Strategy of the Land Transport Regulatory Commission. GAM is also currently finalizing its Gender Action Plan for Equitable Mobility, to ensure equitable access to public transportation for women.¹⁶⁸

2.4.2.3 Waste Management Initiatives and Air Quality

Target 11 .6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Like most major cities, Amman faces a number of environmental challenges, particularly in relation to solid waste management and air quality. GAM is responsible for undertaking all waste management operations within its boundaries, including street cleaning, collection, transfer, transportation, and disposal. Waste disposal takes place at the Al Ghabawi landfill, which is the most advanced municipal solid waste disposal facility in Jordan, deploying waste-to-energy solutions, and which is currently undergoing expansion (refer to Annex 9). A total of 97% of Amman's

163 Meta-Analysis on Women's Participation in the Labor Force in Jordan, UN Jordan (2020).

164 Gender in Public Transportation, SADAQA (2018).

165 Ibid.

166 How the Lack of Public Transport is Keeping Women in Jordan at Home, Urba Net (2020).

167 Primary data collected from a stakeholder at UN Women in March (2022).

168 Amman Spatial Profile, UN-Habitat (2022).



population was covered by solid waste collection services in 2020.¹⁶⁹ In 2015, waste generation in the city was around 2,500-2,700 tonnes per day.¹⁷⁰ However, the influx of Syrian refugees resulted in an increase of 1,000 tonnes of waste per day.¹⁷¹ The most recent data from GAM on solid waste generation in Amman indicates that 379.6 kilograms of waste is being generated per year per capita.¹⁷²

GAM's daily solid waste collection services operate throughout the city's 22 districts. The collected waste is generally taken to the Al-Shaer waste transfer station in East Amman and then transferred in trucks to the Al Ghabawi landfill. The amount of municipal solid waste that is sorted and recycled by type (e.g. cardboard, paper, batteries, plastic, glass and metal) is limited to 3% according to the latest data collected by GAM.¹⁷³ To further reduce GHG emissions and produce electricity, the city has developed a biogas project at the Al Ghabawi landfill that uses biomass to produce methane gas, which is then used for electricity production.

GAM is currently planning to build a mechanical biological treatment (MBT) system, which stabilizes and separates waste unsuitable for recycling, extracting recyclable materials, treating organic waste, producing compost, enhancing soil, and producing solid recovered fuel (SRF) for industrial thermal applications (see the section above on SDG 7 for details). This project is aligned with the strategic objectives of the Amman Green City Action Plan, which are to incorporate circular principles into waste management and to reduce the amount of waste sent to landfills by 12% by 2030.¹⁷⁴

Additionally, GAM will upgrade and expand the Al-Shaer waste transfer station, including its road network, to improve on-site vehicle coordination. This includes the addition of two hydraulic waste presses with a capacity of 90 tons per hour, a weighing station, several containers, an administration building, as well as all civil, electrical, and mechanical works. The project is currently in the feasibility study phase.¹⁷⁵

The Ministry of Environment has set up an Ambient Air Quality Network which consists of 12 continuous monitoring stations, one of which is an urban and traffic station in GAM and a background reference station located in Amman. These stations measure sulphur dioxide (SO₂), carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), and particulate matter (PM10).¹⁷⁶ The limits in the Jordanian national standards for air quality are higher than the WHO guideline limits.¹⁷⁷

The annual Ambient Air Quality Monitoring Report for 2020 notes that the quality of air in Amman is, on average, within the limits allowed by the national standards. The monitored pollutants, namely carbon monoxide, sulphur dioxide, nitrogen dioxide, and ozone, were generally within the current Jordanian standard guideline limits. The levels of particulate matter (PM10) remained below the national standard. It should be noted that pollution levels at measurement stations in Amman are higher, as they include air pollution emitted from various activities in the city (motor vehicles, industry, and domestic heating).

169 Data collected from the AUO (WCCD), (February 2022).

170 Amman Spatial Profile, UN-Habitat (2022), p. 100.

171 Ibid, p. 104.

172 Amman Green City Action Plan 2050, AECOM (2021).

173 Amman Spatial Profile, UN-Habitat (2022), p. 100.

174 Ibid, p. 92.

175 Ibid.

176 Ambient Air Quality Report, The Ministry of Environment (2018).

177 Ibid.

Table 4. Air Pollutants in Amman

Major air pollutants measured in GAM	Jordanian standard yearly average ¹⁷⁸	Annual concentrations in GAM ¹⁷⁹	Year
Fine particulate matter (PM2.5) concentration	-	19 µg/m3	2020
Particulate matter (PM10) concentration	70 µg/m3	46.3 µg/m3	2020
Nitrogen dioxide concentration	50 ppb	23.5 ppb	2020
Ozone concentration	50 ppb	25.1 ppb	2020
Sulphur dioxide concentration	40 ppb	8.7 ppb	2020

Source: the 2020 Ambient Air Quality Monitoring Report

According to the Ambient Air Quality Monitoring Report, the yearly average level of PM10 from the urban station in Amman was at almost 67 µg/m3 (micrograms per cubic metre) in 2018, which is slightly lower than the maximum allowable annual limit in the Jordanian national standards for air quality (70 µg/m3) but much higher than the WHO standard of 15 µg/m3 as an annual mean.¹⁸⁰ In 2020, the PM10 value stood at 46.3 µg/m3, which could potentially be linked to the lockdown measures and movement restrictions in place in Amman for part of 2020 due to the COVID-19 pandemic (Table 4). The same factor could explain the decrease in other air pollutants measured in 2020, which were below the allowed limits in the Jordanian national standards.

One of the recommendations in the 2020 Ambient Air Quality Monitoring Report is to add devices to measure more fine particulate matter, PM2.5, in line with WHO recommendations, as there is a lack of data on PM2.5 measurements in Amman.

2.4.2.4 Green and Public Spaces

Target 11.7: By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

According to the Amman Spatial Profile, there is limited access to parks and green open spaces in the city. There are only 2.5 square metres of park area per capita.¹⁸¹ There are 189 public parks, with a total area of approximately 8.69 square kilometres, within the municipality's boundaries. These parks are located in 92 out of the municipality's 220 neighbourhoods. While 72.5% of Amman's population has access to public parks within a 15-minute walking distance, 92.8% have access within a 30-minute walking distance. The number of trees planted in Amman in 2020 per 100,000 population was 755 (See Table 5).¹⁸² That being

178 Ibid.

179 See Annex 1, the Statistical Annex.

180 Ibid.

181 Amman Spatial Profile, UN-Habitat (2022), p. 114.

182 Ibid.

said, an overall scarcity of public open spaces and limited access to open green spaces negatively affects the quality of life and social cohesion and integration in Amman. It also increases the risks of environmental hazards such as flooding and soil pollution (see the section below on SDG 13).

Table 5. Green Infrastructure

Indicator	Unit	Value	Period
Annual number of trees planted	per 100,000 population	755.2219	2020
Green area (hectares)	per 100,000 population	31.7999	2020

Source: AUO (WCCD), 2020

Further improvements could be made with regard to land management. Currently, land ownership and land use to accommodate rapid urbanization and population growth have taken precedence over the protection and promotion of existing green space. Although there are legally binding requirements in development policy related to the inclusion of green space in new or existing developments in Amman, the enforcement of these measures often fails.

Table 6. Capital Expenditure for Development Projects

Capital expenditures for development projects (value in JD)	2019	2020	2021 (estimated)	2022 (estimated)	2023 (estimated)
Upgrading parks, green spaces, and sustainable public health	4,471,752	1,390,305	4,258,000	6,000,000	5,000,000
Developing libraries, cultural and social projects	799,158	336,238	760,000	1,200,000	1,301,503

Source: Annual General Budget Report, GAM, 2019-2023.

Improving spatial planning to create more green spaces and open spaces within Amman has been identified as a high priority for GAM. The municipality's Directorate of Agriculture and Forestry aspires to increase the percentage of green spaces within the city from 1.6% to 2.5% by cultivating approximately

7,300 dunums (7.3 square kilometres) as new areas, which would raise the per capita share from 3.22 square metres to 5 square metres between 2022 and 2026. Overall, the sector's strategic vision is to establish 13 new parks and gardens, and to refurbish 26 parks and public gardens, bringing the number of eligible parks

to 96 through 2022-2026.¹⁸³ Lack of funding is considered to be another significant barrier to the development of green infrastructure, leaving plots of land underutilized and not serving the community as anticipated (Table 6).

According to a study by German development agency GIZ on public space and gender in Amman, which took place from 2017 to 2019, significantly more women (58%) than men (45%) find it hard to access services and recreation in the city. According to the study, women spend most of their time in markets (78%) and gardens and parks (57%) (one being related to household chores, the other to family-oriented activities) and they find it harder to access services and recreation (reported by 58% of women, in comparison to 45% of men). Importantly, most women can only dedicate a limited time to leisure and depend on public spaces nearby that can accommodate care work.¹⁸⁴

Simultaneously, the study argues that moving through Amman's public spaces as a woman, particularly as a pedestrian, can be very uncomfortable for a variety of reasons, with one specifically standing out: street harassment. Significantly more women (48%) than men (20%) are regularly harassed (Figure 28).¹⁸⁵

With the aim of creating a pedestrian-friendly city, GAM's Public Works Sector has been implementing a number of projects to secure accessibility, mainly by converting the main and arterial public streets in Amman into pedestrian and bicycle-friendly streets. The GIZ project Improving Living Conditions in disadvantaged Areas in Amman (ICLA) was implemented in the city's poor and dense neighbourhoods, aiming to promote walkability and increase pedestrian

safety by linking upgraded informal areas to the BRT lines through stairway renovation and sidewalk improvement.¹⁸⁶

The GAM municipality is also addressing the needs of people with disabilities by converting and/or renovating gardens and public spaces so that they are disability-friendly (e.g. the Munther Al-Masry Street project, Wadi Al-Sir district building, Sweileh district building and King Abdullah II Parks). Mahmoud Al Qda Park in Jabal Nasr is 1,000-square-metre open space located on a leftover plot of land on Palestine Street which was co-designed with the community based on their needs and now serves as a safe and convenient connector between the upper and the lower streets for people with disabilities.¹⁸⁷

Safety

Women feel safe with families, security guards, daylight & female police officers

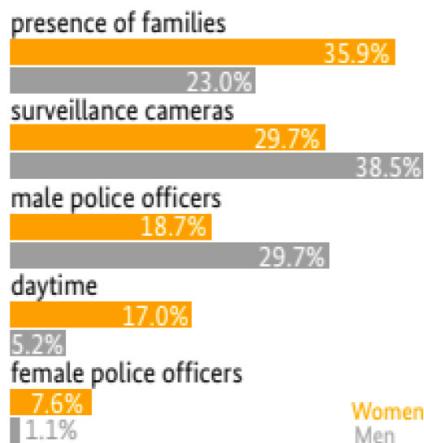


Figure 28. Women's and Men's Safety. Source: GIZ (2020)

183 GAM Strategy Plan (2022-2026), GAM (2022).

184 Public Space and Gender in Amman, GIZ (2020), p. 20.

185 Ibid, p. 22.

186 Improving Green Infrastructure in Amman, GIZ (2022).

187 Amman, Jordan. Comprehensive Climate Plans, World Bank (2018).



Amman is a member of the WHO Global Network for Age-friendly Cities and Communities.¹⁸⁸ Most governmental and non-governmental buildings have taken access for senior citizens into consideration, and allocate priority to older people for benches and seats in public gardens and squares. The national Social Security Corporation has refurbished its buildings to better serve the elderly population, and the Ministry of Transportation has upgraded its shuttles and public buses with special seating.¹⁸⁹ Reviving the joint efforts among all concerned stakeholders to sustain Amman as an age-friendly city is an important step to putting in place a model for nationwide action on this issue.

2.4.3 Implications for Policy and Practice



In the context of intensive urbanization and population growth, the provision of adequate urban infrastructure and services is essential. To ensure that the housing market is capable of delivering for all parts of society, Amman's municipal government is encouraged to work closely with the national government to reinforce the implementation of national and international commitments¹⁹⁰ and develop new tailored housing solutions, to improve housing affordability and quality (see the discussion on energy efficiency in buildings in the SDG 7 section above). In addition, local authorities could involve investors in expanding the supply of affordable housing through legal and financial means, and could strengthen multi-level and multi-stakeholder cooperation and financing for affordable housing. Improving development control (including over land

consumption rates), zoning policies, and regulations can help to better channel the supply of housing to where it is needed and guide sustainable urbanization.

Developing and improving accessibility to public green and open spaces for all play a critical role in addressing environmental challenges, especially in relation to climate change, and it can improve health, well-being and social cohesion. This is particularly important in relation to women and vulnerable communities, as they are more reliant on access to public spaces. That being said, progress toward the SDG targets is linked with improving the GAM administration's capacities and its ability to efficiently generate and/or secure financial resources (see the discussion on this topic in the section below on SDG17), and the removal of bottlenecks to scale up successful interventions. Further awareness-raising actions are encouraged to ensure equal participation of various groups in sustainable development and to enhance social responsibility.

¹⁸⁸ Jordan: Health profile, WHO (2015). Accessed on February 30, 2022.

¹⁸⁹ Ibid.

¹⁹⁰ Jordan is committed to the International Covenant on Economic, Social, and Cultural Rights, which states that its signatories "recognize every person's right to an adequate standard of living for himself and his family, including adequate food, clothing, and housing." Jordan also affirms its commitment to the Habitat III conference on housing and sustainable urban development and to the implementation of the New Urban Agenda, which is integrated with the 2030 Agenda for Sustainable Development, especially SDG 11.



Figure 29. BRT Lane in Amman (Source: UN-Habitat, 2022)



2.5 SDG 13: Climate Action

Take urgent action to combat climate change and its impacts

2.5.1 Highlights

The following review of the targets under SDG 13 outlines the impact of climate change and natural disasters on the development of Amman, flagging the risk of increasing temperatures, erratic rainfall, water scarcity, heat waves, flash floods and droughts. It flags that these risks also have adverse effects on natural ecosystems and biodiversity, impacting food production and the population's health, and limiting access to critical urban infrastructure. According to UNICEF, children in Jordan rank 94th in the world in terms of their exposure and vulnerability to climate and environmental shocks.¹⁹¹ There is no local data available on the number of deaths, missing persons, and directly affected persons attributed to disasters related to climate change.

To strengthen its resilience and adaptive capacity, Amman has made a number of investments in critical urban infrastructure, especially in relation to renewable energy, green buildings, sustainable water, and wastewater management (see the section on SDG 9 above for more details). The climate change agenda is deeply integrated into Jordan's national and local policy frameworks, enabling a systemic approach to address its consequences. Amman is yet to streamline gender and child rights into its policies, strategies, and initiatives on climate change, in accordance with the national strategic vision.

191 Children in Jordan at Risk of the Impacts of the Climate Crisis, UNICEF (2021).

2.5.2 Target Review



2.5.2.1 Multifaceted Approach to Building Resilience

Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

Amman is a member of the C40 Cities Climate Leadership Group and is committed to becoming climate-neutral by 2050. Its action plan identifies important cross-sectoral and urban planning initiatives necessary for achieving this goal. Some of the most important activities address the transportation, energy, solid waste, urban planning, and water management sectors.

Jordan is dependent on fossil fuel imports to meet its energy needs. Distributed renewable energy systems present a great opportunity for cities, businesses and individuals to take control of their energy sources. The GAM administration has created and shared design guidelines for rooftop solar PV systems. The impact of these efforts, as well as of the 2012 Renewable Energy and Efficiency Law, which allows individuals to sell excess output back to the grid, has been a substantial uptake in rooftop solar PV. Around 25 megawatts of rooftop solar capacity had been installed by 2017.¹⁹² GAM has implemented several projects in order to cut the city's electricity bill, including the replacement of existing streetlights and municipal building lights with more efficient LED lights, and the execution of a biogas project (see Annex 9).¹⁹³

Greenhouse gas emissions from residential buildings are a major contributor to total emissions and poor air quality in Amman, followed by emissions from transportation (see the section above on SDG 11 for a discussion on air quality). However, Amman has limited direct control over the building sector. The GAM administration issues building licences, provides certificates of occupancy, and sets zoning regulations. Building codes and incentive structures, however, are set at the national level. Voluntary green building guidelines were published in 2014 by the Jordan Green Buildings Council but have a low level of penetration in Amman because of a lack of enforcement.¹⁹⁴ As a result, the green building market's growth has been slow.

In the transportation sector, many projects are being implemented to improve and encourage the use of public transportation (see the section above on SDG 11 for details on the project). In addition to improving accessibility and mobility in the city, the development of the public transportation system should reduce the use of private cars, reduce GHG emissions and improve air quality. In addition, by rehabilitating and repurposing industrial areas throughout Amman, GAM is seeking to further mitigate the environmental impact on surrounding residential areas. It is also applying new instructions and guidelines related to securing green areas and the industry zoning classification for safe proximity in residential areas.

Amman's climate is expected to become drier, with a reduction in precipitation and an increased dry season.¹⁹⁵ The water infrastructure and services within the city are expected to be heavily impacted, including by reduced water availability, less reliable seasonal rainfall, damage to rain-fed agriculture, increased intensity of droughts during which

¹⁹² The Amman Climate Plan (a vision for 2050 Amman), Ministry of Environment & GAM (2019), p. 34.

¹⁹³ Primary data collected from a stakeholder at GAM.

¹⁹⁴ Primary data collected from a stakeholder at GAM.

¹⁹⁵ Climate Change Profile Jordan, Ministry of Foreign Affairs NL (2018).

reservoirs are not refilled, and higher irrigation water demand as a result of increased water evaporation due to higher temperatures.

Amman is also vulnerable to flash floods, which affect the urban fabric, the power grid, and access to basic services, while additionally exacerbating the vulnerabilities of poorer residents, including Jordanians and Syrian refugees. The most recent flash flood, in 2019, caused significant material losses in the downtown area of Amman. Businesses located in this area suffered losses of inventory and structural damage to their premises, along with other material losses to property and vehicles. There is no available official local data on the number of natural disaster-related deaths in Amman. However, the cost of the damage following 2019 flooding, calculated by

GAM and the Amman Chamber of Commerce, was estimated at JD 7,115,326 in damage to businesses, and JD 2,000,000 in damage to infrastructure.¹⁹⁶

Amman is determined to improve both the resilience of its urban infrastructure and services and its response to emergencies, including COVID-19 (see Chapter 3 for more details on the impact of COVID-19) and hazardous events. As a response to hazardous events like flash floods, GAM has established protocols for emergency operations to be implemented by the GAM emergency centre, coordinating the activity of the different district managers. During such events, these plans are to be activated in coordination with all of the sectors of the GAM municipal administration.

Vulnerable groups and green infrastructure

Responding to the increased risk of flash floods in Jordan, UN-Habitat, in partnership with GAM, has provided vocational training on implementing green solutions at the household level, to enhance resilience and strengthen the social stability of vulnerable Jordanian communities and Syrian refugees in Amman. Participants learned about implementing wicking beds and sustainable agriculture methods as solutions to mitigate the risk of flash floods, while enhancing their social responsibility and livelihood opportunities.

The project also aimed at building a productive community by enhancing their skills in recycling household and agricultural waste, helping participants contribute to their household production, providing more job opportunities, and enhancing social cohesion among members of the local community.¹⁹⁷

Generally, projects related to sustainable water and wastewater management in Amman include upgrading and expanding access to water and wastewater networks, developing sustainable recreational areas, investing in expanding green spaces, and

improving the participatory development of green infrastructure for the less economically advantaged areas of Amman.

Urban Micro-Lungs (UML) is a green infrastructure intervention carried out by

¹⁹⁶ Developing a Preliminary Design for Flood Mitigation Measures and Performing a Flood Risk Assessment and Flood Hazard Mapping for Downtown Amman, Dar (2021).

¹⁹⁷ Strengthening urban resilience in Amman, Jordan, to mitigate flash floods and protect vulnerable communities, UN-Habitat (2021).



Figure 30. Urban Micro-Lungs Initiative in Amman (Source: C40 Cities, 2021)

the project Improving Living Conditions in disadvantaged areas in Amman, funded by the German Federal Ministry of Economic Development and Cooperation (BMZ), and implemented by GIZ, GAM and the Ministry of Environment (see the section below on SDG 17 for more information about partnerships).¹⁹⁸ The project aims to make dense urban areas greener by planting micro forests to help offset the negative effects of climate change, such as flash floods, while creating other positive impacts, such as improving air quality and providing shade. The process utilized a participatory approach that sought to involve community members of all ages (Figure 30).

In terms of stormwater management projects, Amman has incorporated sustainable urban drainage systems (SuDS) principles into publicly owned buildings, supporting the merging of water-sensitive urban design (WSUD) and SuDS. In addition, the UN-Habitat's Flash Floods Resilience project, funded by the Government of Japan, identified 120 suitable sites for pilot projects addressing this issue through the Flood Risk Assessment and Hazard Mapping Study. The project will help reduce the effects of droughts, while also securing more reliable water sources. For the

agriculture component of this programme, water resource development systems will focus on dry and drought-resistant agriculture. Overall, this aims to reduce flood risk in critical areas by 50% by 2040.

Additionally, under UN-Habitat's Flash Floods Resilience project, a stormwater detention concept, Al-Zohour green triangle pilot flood control is being implemented approximately 3 kilometres southwest of downtown Amman. It consists of two main mechanisms: an underground concrete tank (~500 m²) and a biorientation area (~2,000 m²). The proposed systems can mitigate many of the adverse effects of urban stormwater on the environment, making them more sustainable than conventional drainage methods.¹⁹⁹

2.5.2.2 Leading on Climate Change Action

Target 13.2: Integrate climate change measures into national policies, strategies and planning

Both Jordan and Amman are committed to actions on climate change. Climate change measures have been integrated into national and local policymaking with a number of strategies, plans and policies launched as a result.

Amman's Green Growth Programme (AGGP) was launched in 2008, but it was not completed. The programme focused on four key pillars related to energy (transportation, waste, water, and urban forestry) and aimed at improving the urban environment while contributing to the climate agenda.

The **National Policy on Climate Change** was adopted in January 2013. The policy aims to

198 Amman Urban Micro Lungs Initiative, C40 Cities (2021)

199 Amman Spatial Profile, UN-Habitat (2022).

strengthen Jordan's capacity to respond to the impacts of climate change.

The **National Green Growth Plan** was released in 2017 with the aim of outlining the major steps for Jordan's transition to a green economy, with emphasis on the importance of enabling the environment for green growth.

The **Amman Resilience Strategy** was published in 2017, setting out the vision for a resilient Amman and the pillars, goals and actions that will help achieve resilience.

The **Amman Climate Action Plan 2050** was launched in 2019 and was the first such climate action plan by a city in the region. The strategy focused on the decarbonization of Amman's economy and developing resilience against climate change.

The **Amman Green City Action Plan**, released in May 2021, was developed based on GAM's efforts to improve environmental performance and to take a more systematic approach to addressing its existing and emerging urban environmental challenges (see Annex 9 for more information regarding projects and initiatives).

These initiatives help Jordan to fulfil the obligations under the Nationally Determined Contributions (NDC) in October 2021, by increasing the commitment to the reduction of GHG emissions from 14% to 31%, while guiding the country's transition towards a low carbon economy and climate-resilient development.²⁰⁰

Recognizing that the negative impacts of climate change and the environmental effects of unclean fuels and inefficient technologies can be devastating for women, who are traditionally responsible for the household economy and are active in agriculture, Jordan has addressed streamlining gender into policy

²⁰⁰ Updated Submission of Jordan's 1st Nationally Determined Contribution (NDC), Ministry of Environment (2021).

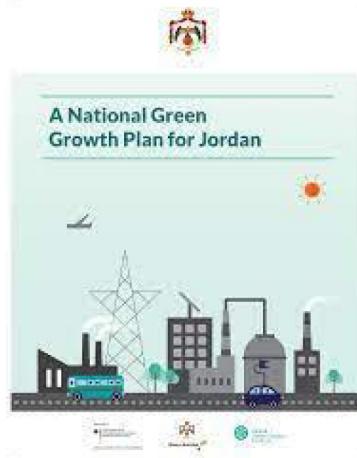


Figure 31. A National Green Growth Plan for Jordan

Amman Resilience Strategy



Figure 32. Amman Resilience Strategy



Figure 33. Amman Green City Action Plan

on climate change.²⁰¹ The National Policy on Climate Change 2013-2020 provided funding for developing and implementing climate policies, strategies and programmes at all levels of governance, to mitigate and adapt, and to meet the needs of poor women and men equally.²⁰²

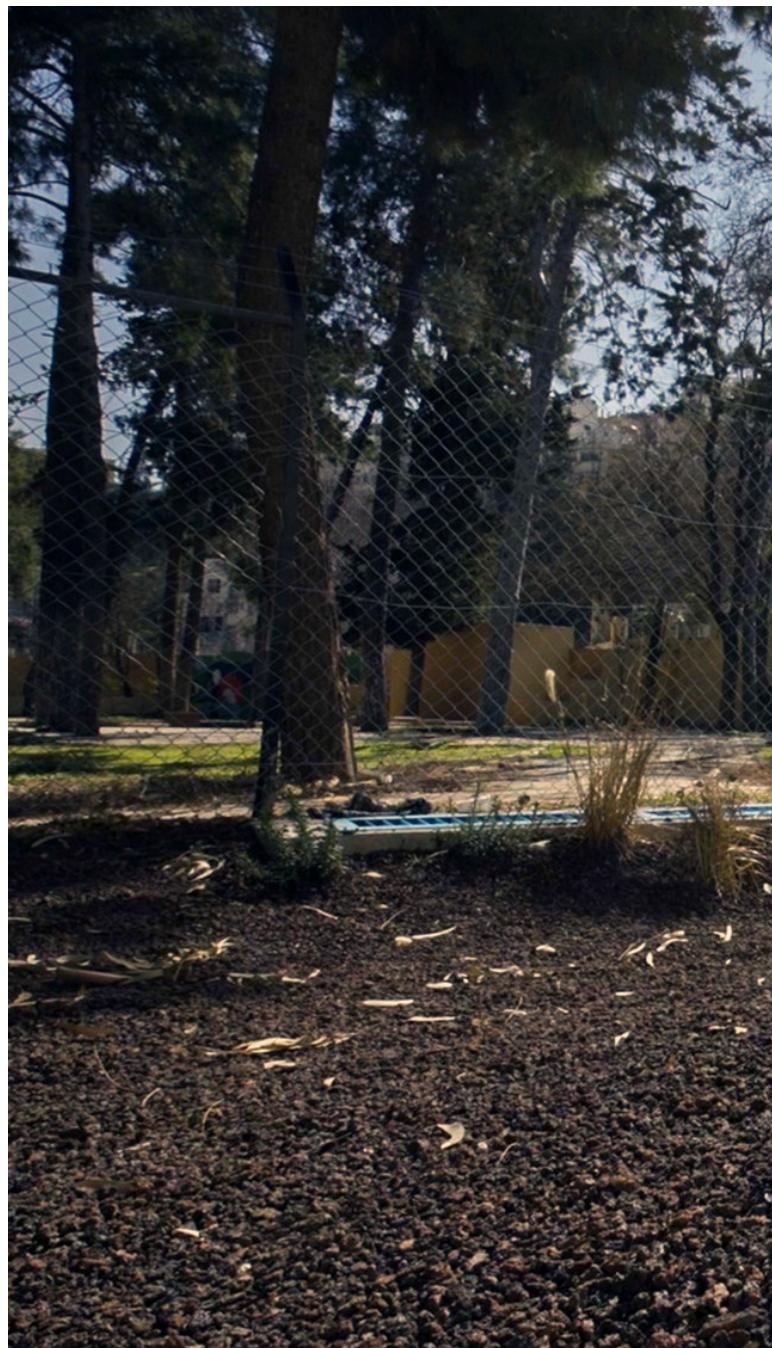
2.5.3 Implications for Policy and Practice



Amman faces a number of challenges due to climate change, and as a result, considerable efforts have been made to improve the resilience of its urban infrastructure and services. Adequate data related to economic and infrastructural impact of climate change, as well as the number of related deaths, needs to be produced and collected in order to measure the impact such effects may have on different urban areas and community groups and to tailor solutions accordingly. Water and wastewater management in Amman needs to be looked at holistically to ensure it reflects the city's strategic development objectives, particularly in light of the city's dynamic growth. Multi-functional tools like green infrastructure and sustainable urban drainage systems should be further integrated by GAM.

Policies, programmes, projects, recommendations and guidelines for green building should be further implemented by ensuring the enforcement of the building codes and policies set at the national level. Improving energy efficiency in buildings may result in positive economic and social impacts at the household level, as well as for the broader economy. Additionally, Amman needs to improve its land use regulations and practices to accommodate the development

of green spaces, which are vital for minimizing Urban Heat Islands (UHIs) and are also a natural flood prevention tool. The city is encouraged to reinforce the implementation and monitoring of its policies, strategies, and plans addressing climate change, not equally.²⁰²

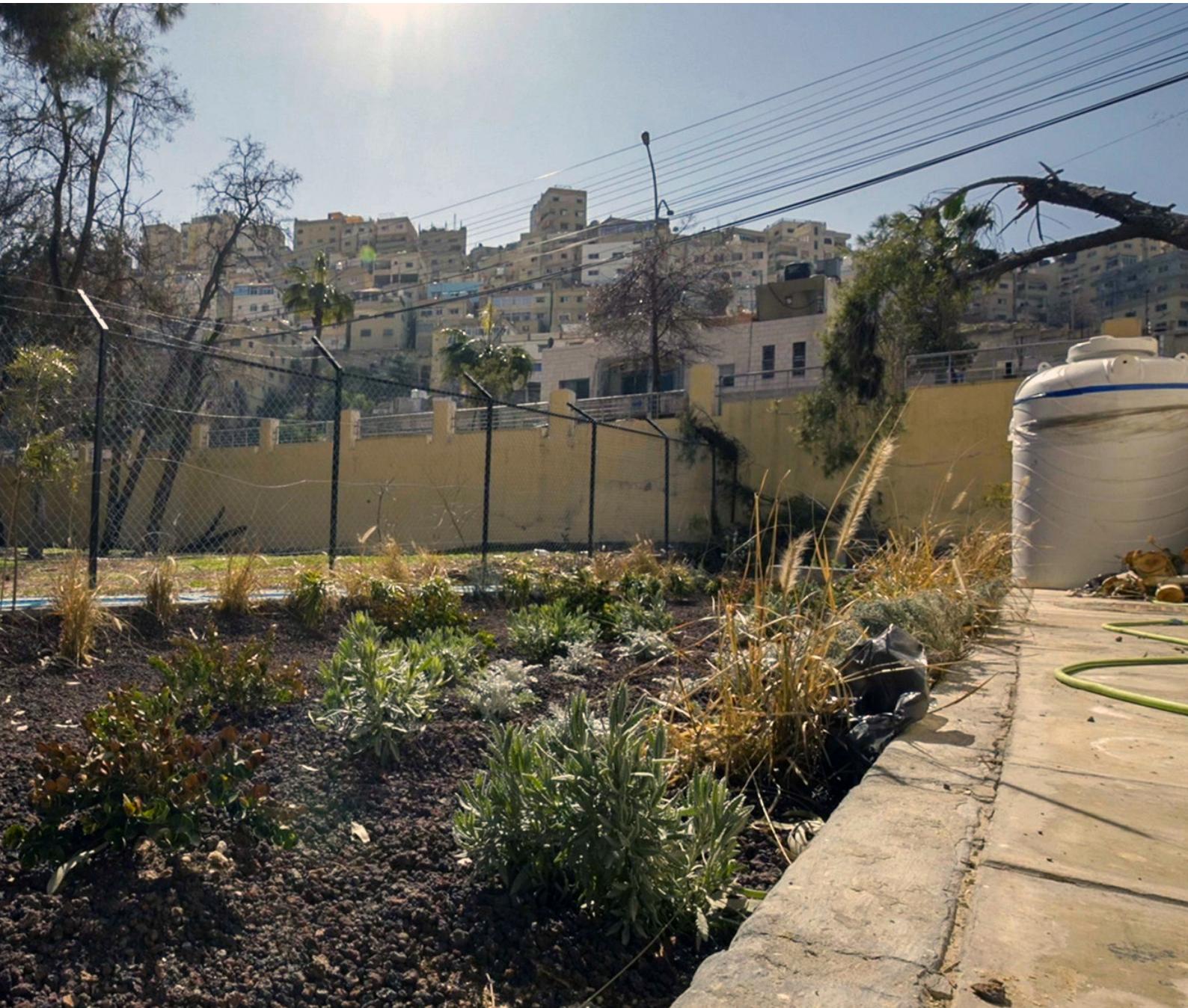


201 Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development, UN Women (2018).

202 The National Climate Change Policy of the Hashemite Kingdom of Jordan (2013-2020), Ministry of Environment (2013).



least by improving institutional human and financial capacities, further developing public awareness and participation campaigns that induce behavioural change, and attracting and implementing innovative technologies. In addition, gender needs to be a key component in climate action. It is addressed in the national policy on climate change and needs to be streamlined into the local level policy frameworks.



*Figure 34. Rain Garden to Mitigate Flash Flood Risk in Affordable Housing Unit in Amman
(Source: UN-Habitat, 2022)*



2.6 SDG 17: Partnership for the Goals



Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

2.6.1 Highlights



A range of projects in Amman have been implemented through international cooperation to improve access to and availability of urban infrastructure and services across a number of sectors: healthcare, energy, public transportation, urban planning, and others (see the sections above on SDG 3, SDG 7, SDG 9, SDG 11 and SDG 13). The following review of the targets under SDG 17, although challenged by limited access to disaggregated data, shows that the GAM administration functions as a testing ground for collaborative and transformative development projects. It points out that a significantly autonomous entity, and it is primarily financially independent of the national government. A large percentage of its revenues is self-generated (88% in 2020).²⁰³

GAM is interested in the development of public-private partnerships and coordinates its efforts to increase private sector participation in key

infrastructure projects. It has established relations with an international network, cities, and organizations (see the subsection below on international cooperation), providing opportunities for an ongoing exchange of knowledge and expertise, and influencing local capacity development.

In its commitment to the 2030 Agenda for Sustainable Development, GAM has made considerable efforts to reinforce policy coherence by harmonizing local policies, strategies, plans, projects and programmes with the SDGs, and with policy frameworks at a national scale. GAM also develops SDG-led partnerships and applies the principles of good governance, as well as effective planning practices, organization, monitoring, evaluation and follow-up, as a means of contributing to the alignment of local policies with the SDG framework.

203 Ibid, p.160.



2.6.2 Target Review



2.6.2.1 Amman's Financial Resource Capacity

Target 17.1: Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection

GAM is an autonomous entity within Jordan.²⁰⁴ It operates according to Law 18 of 2021 and does not fall under the jurisdiction of the Ministry of Local Administration (MoLA).²⁰⁵ It is independent in preparing and approving the general and annual budgets²⁰⁶ and has the power to sign memorandums of understanding (MoUs) with national institutions and international donors, with the approval of the Prime Minister and the Ministry of Planning

and International Cooperation (MoPIC). This plays an important role in attracting funding and financing opportunities.

In 2020, 88% of the municipal revenue of GAM was self-generated (Figure 35)²⁰⁷ with the main sources of revenue including property taxes, levies, and fines, returns on investments, central government grants, and grants from foreign partners. Figure 36 shows that, between 2016 and 2018, property tax was the most significant revenue source for GAM, while resources collected from traffic fines and construction permit fees shrank, and revenue from property betterment fines fluctuated. Revenues from garbage fees and rent remained stable throughout this period.

Despite an increase in self-generated revenues through a number of sources, GAM accumulated arrears between 2011 and 2018 (Figure 37).²⁰⁸

In 2020, GAM suffered from significantly reduced revenue, which can be attributed to

GAM 2020 Municipal Total Gross Revenues Disaggregated per Source in JOD

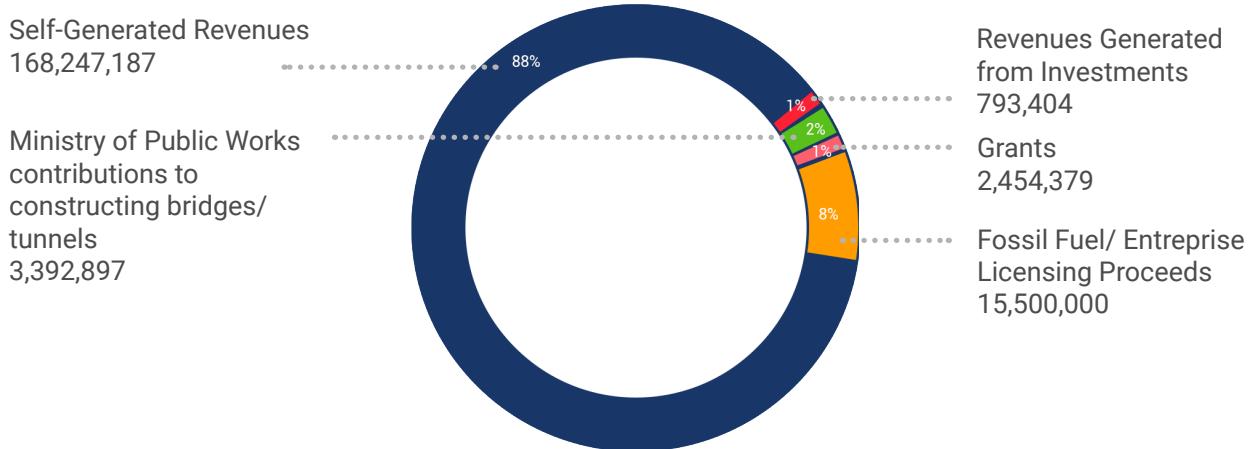


Figure 35. GAM 2020 Municipal Total Gross Revenue Desegregation per Source. Source: GAM Annual General Budget Review 2019-2023.

204 Jordan's municipalities are legal and budgetary entities governed by the Local Administration Law, which defines a municipality as "a civil institution with financial and administrative independence."

205 Ibid, p. 68.

206 Amman Spatial Profile, UN-Habitat (2022), p. 34.

207 Ibid, p. 160.

208 Proposals to improve GAM's revenue collection. Presentation, World Bank (2019).

Seven Revenue Sources that Accounted for 76% of GAM's Own Revenues in 2018

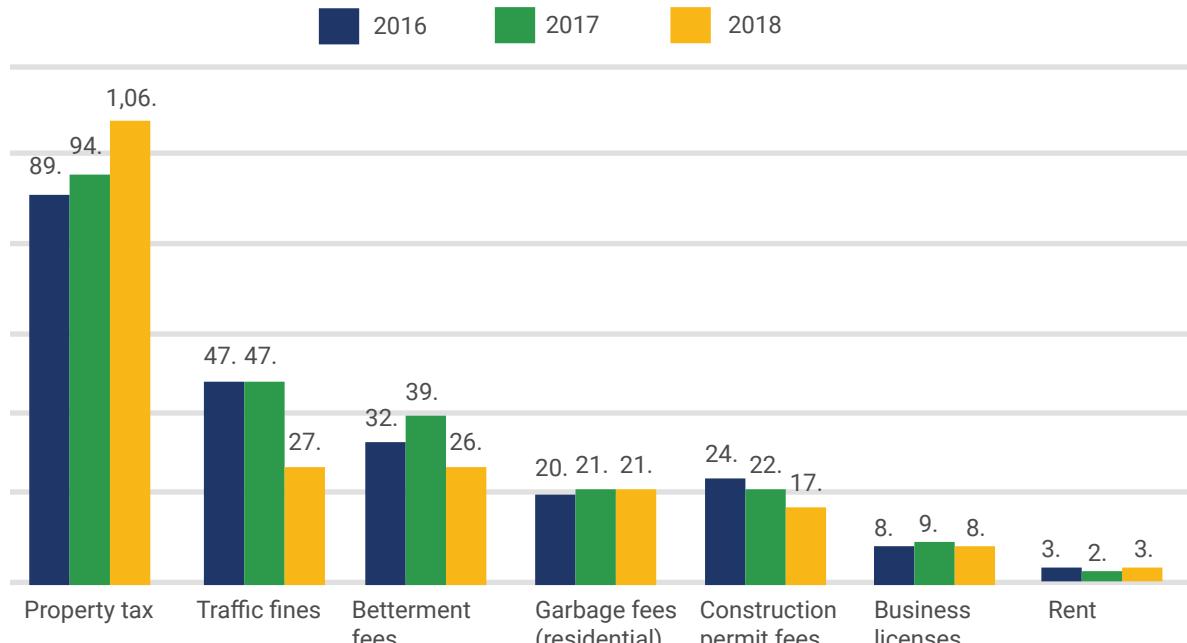


Figure 36. Revenue Sources of GAM. Source: World Bank, 2019

the COVID-19 pandemic (see Chapter 3 for more details).²⁰⁹

Although GAM's budget forecasts predict continued exponential growth, the revenue collection system could be improved by introducing credit management practices for all revenue sources, establishing professional call centres dedicated to customer relations, improving management reporting, and strengthening performance management.²¹⁰

GAM's budget revenues are effectively connected with the capital funding investments carried out in collaboration with businesses, international financing organizations, donors and others, through public-private partnerships, among other structures.

Since the early 1990s when a law on privatization was passed, a range of projects have been carried out through public-private partnerships in Jordan and in Amman specifically, including the redevelopment of the Queen Alia International Airport (see Annex 9 for project details). The law was amended in 2020, but it may require further reviews to provide a stable and enabling legal structure for future public-private partnerships, and in order to ensure good governance and proper risk distribution. Macroeconomic and political stability also play important roles in ensuring successful public-private partnerships in Amman and across Jordan.²¹¹

A new investment arm of GAM, Amman Vision Company, was established in 2019, and is responsible for the procurement procedures

209 Ibid.

210 Amman Spatial Profile, UN-Habitat (2022), p. 119.

211 Delivering PPPs in Amman and Jordan can be perceived as challenging for a range of reasons and is discussed in e.g. Almuhsen M., Çelik T., Gökçekuş H., (2013), Developing an AHP Risk Assessment Model for PPP Projects in Jordan Abstract. Accessed on May 15, 2022; and Mistarihi, A.; Hutchings, K.; Shacklock, A.H.; Differing opinions do not spoil friendships: Managing public-private partnership (PPP) infrastructure projects in Jordan (2013).

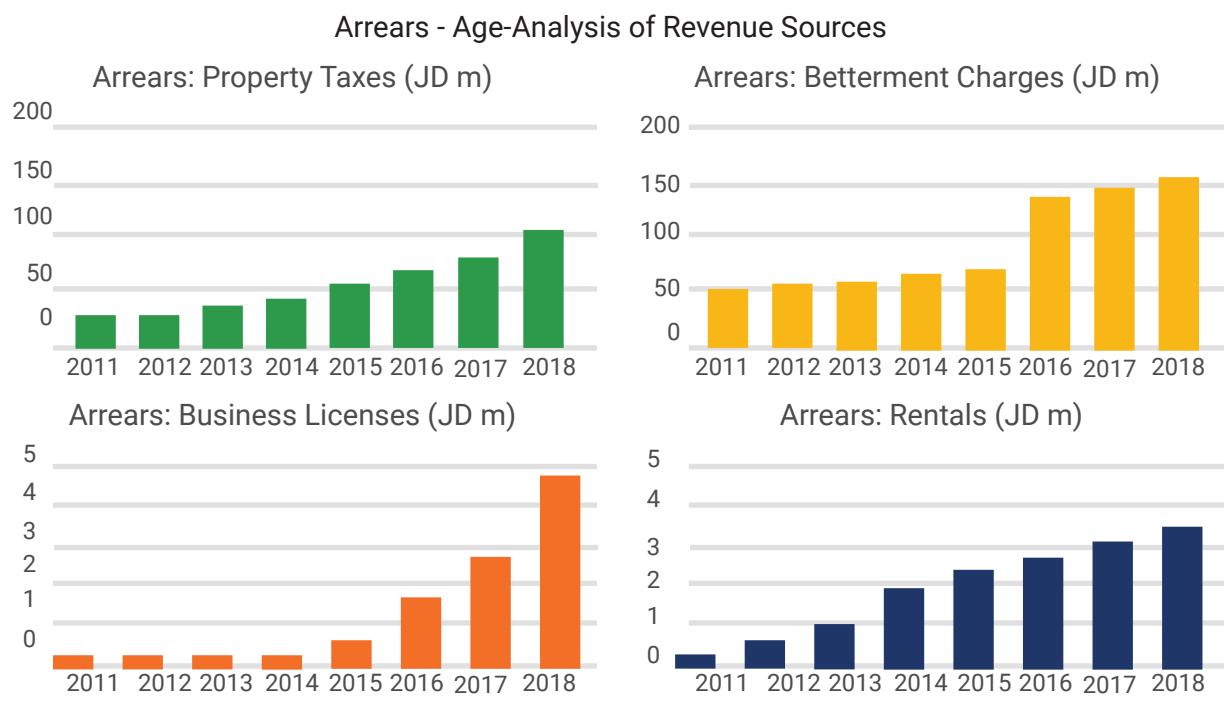


Figure 37. Arrears of GAM. Source: World Bank, 2019

and contract management of project investors. It will play an important role in mobilizing funding and financing for commercial development and critical urban infrastructure and services projects in Amman (see the section above on SDG 9 for information on resilient urban infrastructure).²¹²

2.6.2.2 International Cooperation

Target 17.6: Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism

A special role in safeguarding the presence of Amman in the international arena is played by GAM's Department of International Relations. Along with the Ministry of Planning and International Cooperation and the Ministry of Foreign Affairs, this department is responsible for developing and maintaining international relations, coordinating international

²¹² Primary data was collected from a stakeholder at GAM on May 24, 2022. Proposals to improve GAM's revenue collection. Presentation, World Bank (2019).

cooperation, and channelling the exchange of knowledge and good practices with various international partners in relation to transport, climate change (see the section above on SDG 13), migration, green infrastructure, and the circular economy (see Annex 9 for project examples).

Twinning and sister city agreements, and other cooperation agreements, are important tools used by GAM to establish and manage official relations with cities outside Jordan in order to achieve mutual goals and benefit from sharing data, benchmarking methodologies, and technical expertise. For example, GAM has a long-term collaborative relationship with the city of Istanbul, which provides technical support for GAM staff in the transportation sector.²¹³ Amman has partnerships with 42 cities in the Arab region and beyond.²¹⁴

Amman is also a member of the 100 Resilient Cities Network, which is made up of cities from around the world that are committed to building and investing in urban resilience.²¹⁵ In addition, it was the first city in the Middle East to join the C40 Cities Climate Leadership Group, which includes megacities from around the world that are committed to addressing climate change through improving their environment, infrastructure, and public transport (see the section above on SDG 11 for more information on public transport).

Amman benefits from knowledge sharing activities being a centre for international cooperation in Jordan, and in the Arab region; and thanks to the high concentration of institutions working on science, technology, and

innovation. Its knowledge sharing practices could be further strengthened by:²¹⁶

- applying scientific methodologies to research the city's needs;
- aligning knowledge and sharing with GAM's strategic objectives;
- improving communication among various layers of municipal administration and with political representatives;
- providing technical support and otherwise improving the capacity of the GAM administration to produce, manage and share knowledge.

As Jordan qualifies for receiving official development assistance (ODA) from donor countries, donor agencies, international financing institutions, multilateral financial institutions and international organizations,²¹⁷ GAM is a considerable beneficiary of ODA and works closely with a range of partners on issues pertaining to science, technology and innovation, benefitting from their presence in Jordan (see Table 7).

213 Primary data collection through informal interview with GAM committee on the VLR, (May 22, 2022).

214 These partnerships are executed through charters of friendship and cooperation, a memorandum of friendship and cooperation, a fraternity agreement, a friendship and cooperation protocol, a fraternity protocol, an MoU, a twinning agreement, a fraternity and cooperation pact, a bilateral cooperation pact, or a fraternity work, to strengthen its relationships and partnerships on a local, regional, and international level, as well as through proactive membership in international organizations and the exchange of municipal best practices.

215 Amman's Resilience Journey, Resilient Cities Network.

216 SDG 17 survey carried out for the purpose of this VLR.

217 Foreign Assistance, Ministry of Planning and International Cooperation.



Table 7. Selected international actors present in Jordan

Networks of cities and other public sector organizations	International financial institutions and development agencies	Countries
UCLG	European Investment Bank	United States of America
Metropolis	Agence Française de Développement	United Kingdom
International Association of Public Transport (UITP)	World Bank	European Union (Germany, France, Norway, Denmark, Sweden)
C40	KFW Development Bank	Saudi Arabia, the United Arab Emirates and Kuwait
Mayor's Migration Council	European Bank for Reconstruction and Development	Japan, South Korea

The total value of assistance provided to Jordan by foreign countries from 2009 to 2019 amounted to \$26 billion, of which \$16.5 billion was provided in grants and \$9.5 billion in soft loans, to support development projects in priority sectors and the general budget.²¹⁸ Jordan is also a considerable beneficiary of international development and humanitarian aid, with \$3.6 billion received in grants and loans in 2021.²¹⁹ Foreign aid provided to GAM in 2021 constituted 56% of the total annual municipal budget.²²⁰

Financial support received from international cooperation agencies and international donors plays an important role not only in delivering urban infrastructure and services but also in addressing the repercussions of the Syrian crisis on the national and local economies. Compliance with international financial reporting standards can reinforce GAM's financial management. In addition, the work of the municipality to achieve a good credit rating can open new opportunities for attracting

international donors and funding agencies, as well as decreasing the cost of borrowing.

Flagship projects implemented in Amman through international cooperation include the Bus Rapid Transit system financed through a loan from the AFD, the Solid Waste Crisis Response Program financed by the EBRD through blended financing comprising both grants and loans, and the green infrastructure projects funded by the GIZ (for additional projects implemented in Amman through international cooperation, see Annex 9).

²¹⁸ Ibid.

²¹⁹ Foreign Assistance Committed to Jordan Report 2021, p. 1

²²⁰ Ibid.

2.6.2.3 Policy Coherence

Target 17.14: Enhance policy coherence for sustainable development

Over the last decade, GAM has made considerable efforts to reinforce policy coherence on sustainable development by harmonizing the local policy initiatives (policies, strategies, plans, projects and programmes) with the SDGs and the policy initiatives at the national and local level.²²¹

GAM has mainstreamed the SDGs into several sectors,²²² including construction, transportation and climate change, and linked these initiatives with the city's strategic goals, as well as with the national objectives (see Annex 3 on the correlation of national objectives with strategic objectives and Annex 7 on mapping GAM's SDG achievements between 2018 and 2022).

According to GAM's stated vision,²²³ it aims to deploy a strategic, holistic urban planning approach that is based on the essence of sustainable development for the people of Amman, and to bring about a smart, sustainable transformation of the city.²²⁴ Through a mapping exercise, GAM recognized that for instance one of the city's strategic development goals, inclusive and sustainable urban planning is aligned with the delivery of national objective 2²²⁵ and with SDG 11. The city's progress towards this objective is monitored via the Amman Prosperity Index, provided by the Amman Urban Observatory.²²⁶

An important element in improving policy coherence on sustainable development in Amman has been reinforcing the links between the VLR and Jordan's most recent VNR. The documents complement each other in their purpose and detail the advances made in the performance on the SDGs at the national and local scales. Both documents analyse sustainable development challenges and both share some common references, as well as some expert groups who took part in the reporting process (see methodology in Chapter 1 for more information).

Amman aspires to reinforce the policy coherence for sustainable development through mainstreaming the SDGs into various policy areas, applying the principles of good governance, and promoting effective planning practices, organization, monitoring, evaluation and follow-up. Developing inclusive, SDG-led partnerships between the government and private sector stakeholders, civil society and individuals, mitigating the financial constraints and challenges of coordinating policy initiatives, and improving access to and availability of high-level granular data are all critical factors contributing to the alignment of local policies to the SDG framework. Amman requires a pragmatic approach that will fit the SDG targets and indicators into its own particular context, and help its residents understand how local action contributes to achieving the SDGs.²²⁷

Policy coherence on sustainable development in Amman can be further reinforced by mainstreaming gender considerations in municipal policies and practices. Jordan is a signatory to and member of several

221 Primary data was collected through a formal interview with stakeholders from GAM's Funding and Financing Department and Strategic Planning Department (May 2022).

222 SDG 17 survey carried out for the purpose of this VLR.

223 GAM's vision and mission.

224 Electronic Transformation of GAM, GAM (2020).

225 The Indicative Executive Programme for the Government of Jordan (2021-2024), Ministry of Planning and International Cooperation (2021).

226 Linking the goals and projects of GAM to the SDGs 2022-2026 (Unpublished), GAM.

227 Roadmap for localizing the SDGs, UN-Habitat (2021).



key international agreements that commit the country to gender mainstreaming. The National Strategy for Women 2020-2025 notes that gender is a cross-cutting area within all national frameworks.²²⁸ Although there are no gender indicators at the national level yet, the urban data collected locally by the Amman Urban Observatory (World Council on City Data) already uses a framework that is gender-sensitive.

In summary, improving the policy coherence for sustainable development in GAM will further require:²²⁹

- finer alignment of the SDGs, their targets, and indicators with the strategic goals of GAM;
- adequate monitoring and collection of urban data inclusive of vulnerable groups, particularly women;
- increased public awareness on the issues of sustainable development, as well as on the importance of their engagement in the process;
- strengthening of political support for developing a regional approach to achieve better SDG performance among regional and local actors;
- improved capacity of GAM employees to help the municipality to better implement the SDGs locally;
- decentralization of SDG implementation activities throughout the promotion of dialogue from the bottom up;
- engagement with a diversity of stakeholders from the civil society, academia, private and not-for-profit sectors, among others.

2.6.3 Implications for Policy and Practice



The above review of the targets under SDG17 highlights the need for improved access to data, which would help to channel international cooperation and aid activity to where it is most needed. It is crucial to ensure secured and continued investment in sustainable development projects in Amman and improved progress towards achieving the SDGs. Policy coherence for sustainable development is another important aspect that Amman needs to focus on to encourage mainstreaming of the implementation of the SDGs.

Localization of the SDGs relates to both how the SDGs can guide local planning for development, and how local and regional governments can support the achievement of the SDGs across all levels of governance. In relation to the former, GAM is well-placed to raise awareness about the importance of the SDGs and their relevance to local communities. Awareness-raising is not only about informing citizens about the existence of the SDGs; it is also about empowering them to participate in the achievement of the SDGs in their daily lives. In relation to this, the coordination of efforts and commitments to sustainable development among other relevant actors in the city also requires coordination and support from GAM. Amman should recognize the 2030 Agenda for Sustainable Development as a framework for action and set up mechanisms that enable citizen participation and improve institutions' accountability.

²²⁸ Primary data collected from a stakeholder from UNFCCC (June 8, 2022).

²²⁹ SDG 17 survey carried out for the purpose of this VLR.





Figure 38. Opening of Al Zohour Green Triangle in Downtown Amman, a partnership between Greater Amman Municipality and UN-Habitat, with funding from the Government of Japan. (Source: Greater Amman Municipality, 2022)

CHAPTER 3:

IMPACT OF COVID-19 AND KEY MESSAGES

3.1 Impact of COVID-19



3.1.1 Impact of COVID-19 on Development in Jordan



The COVID-19 pandemic has considerably affected economic development in Jordan, especially production, tourism and trade, social relationships, and the quality of life in the country. The first positive COVID-19 case in Jordan was identified on 2 March 2020.²³⁰ As a result, His Majesty King Abdullah II signed a royal decree to enact the National Defense Law, which established the state of emergency to contain the spread of the virus. The Prime Minister and the National Center for Crisis Management set up strict lockdown and response measures that included the closure of educational institutions, air and land borders, private businesses, banks, non-essential public services, and public religious gatherings.²³¹

The impact of the pandemic on the country's economy has been significant. It has led to income loss, has increased the vulnerability of daily wage workers who could no longer access employment due to the lockdowns, and has had a major effect on women's employment. Based on national statistics, in 2020 Jordan's GDP decreased by 1.6%, while

income per capita contracted by 2.5%. By the last quarter of 2020, the unemployment rate had increased to 24.7%, and the poverty rate by 40%. Prior to the pandemic, women's unemployment rates were 23%, compared to 13% among men, according to the World Bank. Due to the pandemic, female unemployment rose to 32.8%, while male unemployment rose to 22.6%.²³² The pandemic also put pressure on state finances. In 2020, the public deficit grew to 8% of GDP, compared to 2.1% the previous year. In 2020, the fiscal deficit (excluding grants) widened to 10.1% of GDP, while the central government's debt increased to 109.9% of GDP.²³³

Jordan's tourism was also impacted heavily by COVID-19 lockdown measures. Prior to the pandemic, in 2019, the country's tourism revenue was \$6.9 billion, and the tourism and hospitality sector employed 53,500 people (a record for the sector).²³⁴ Currently, national efforts are being exerted to support the revival of the sector in the wake of the pandemic. The goal is to adopt the National Tourism Strategy 2021-2025²³⁵ to increase the number of tourists, boosting both the sector's overall revenues and direct employment in the coming years.²³⁶

In 2021, the International Labour Organization (ILO) conducted an assessment of the impact of the COVID-19 pandemic on over 2,000 Jordanian enterprises, showing that the pandemic had increased economic burdens on private enterprises paying rent, and that

230 Jordan National Defense Law and COVID-19, UNDP (2020).

231 Ibid.

232 Inclusive, Transparent and Climate Responsive Investments Program For Results, World Bank Group (2022).

233 Ibid.

234 Inclusive, Transparent and Climate Responsive Investments Program For Results, World Bank Group (2022).

235 National Tourism Strategy 2021-2025: By 2025, raise the number of tourists to its highest record in comparison to 2019 figures. By 2024, increase the total revenues in comparison to 2019 figures. By 2023, increase direct employment in tourism to exceed figures from 2019. UNDP and Ministry of Tourism and Antiquities (2022).

236 The Voluntary National Review of Jordan, Version 16/04/2022 (Unpublished).

one in five enterprises had experienced an increase in debt and staff reductions.²³⁷

The pandemic also hindered access to healthcare infrastructure and services in the country. Several national healthcare programmes were temporarily withheld, such as family planning services, pregnancy care, and the early detection of genetic diseases. The treatment of the patients with chronic diseases was subject to delays. Most international projects supporting healthcare services were stopped and re-directed to the emergency response addressing the pandemic. At the neighbourhood level, the pandemic created challenges in accessing basic goods, services, and infrastructure, including open public spaces.²³⁸

3.1.2 GAM's Response



The COVID-19 pandemic impacted GAM's revenues heavily, as inhabitants stopped paying taxes, leading to a JD 31,341,029 decrease in the municipality's revenues between March and May 2020. According to GAM's budget and finance department, 2021 saw a JD 45 million deficit (15% of the municipality's revenues). A number of GAM's projects were put on hold, including the Bus Rapid Transport project, which was delayed due to affected cash flows (see Annex 8 for more information on GAM projects and initiatives postponed due to the COVID-19 pandemic).

A report on Amman's institutional performance and resilience²³⁹ highlights over 31 actions taken by GAM to ensure an emergency contingency plan was in place prior to the first case of COVID-19 in Jordan, to limit the spread of the virus. These actions included monitoring

the levels of compliance with COVID-19 measures put in place by the government, and the allocation of 200 personnel employed by GAM to carry out the disinfection and sterilization of public infrastructure (e.g. roads and pavements), as well as rodent control and animal care. GAM also invested in collecting new data on the impacts of COVID-19.

The report also assessed Amman's resilience levels from March to May 2020, when the National Defense Law and a curfew were put into place. The focus of the report was on three main themes: transportation and mobility, air quality, and the availability of basic services within neighbourhoods.²⁴⁰ The report also highlighted the municipality's focus programmes during the pandemic, especially the improvement of e-services, implementing awareness campaigns, putting in place new strategies for the disposal of medical waste, and supporting smaller municipalities outside the capital in providing services throughout the pandemic.

237 Impact of COVID-19 on Enterprises in Jordan: One year into the pandemic, ILO (2021).

238 The Voluntary National Review of Jordan, Version 16/04/2022 (Unpublished).

239 Launching the institutional performance report and Amman's resilience in the face of the Corona-virus, GAM (2020).

240 Ibid.

3.1.3 COVID-19 and Environmental Impacts



Regarding the environmental impact of the COVID-19 pandemic in Amman, measuring stations were used to compare air quality and the presence of different particles and gasses

between 2019 and 2020. Data revealed that the levels of particulate matter (PM10), nitrogen dioxide, carbon monoxide and ozone levels all dropped significantly during the lockdown period and continued to stay below the threshold following that period. Figure 39 shows the decrease in PM10 distribution across Amman between 1 March and 10 April 2020.²⁴¹



Figure 39. PM10 Distribution Across Amman From 1 March to 10 April 2020. Source: Amman's Urban Response to COVID-19 & Institutional Performance, GAM (2020)

241 Amman's Urban Response to COVID-19 & Institutional Performance, GAM & International Growth Center (2020).

3.1.4 Emergency Response 3.1.5 Concluding Remarks



Towards August 2020, the government of Jordan began reducing COVID-19 restrictions. However, after the parliamentary elections in November 2020, the number of COVID-19 cases spiked to nearly 8,000 a day, which prompted a second lockdown. There was a second wave of cases in March 2021, with more than 9,500 cases a day. The government introduced several measures to mitigate the negative impact on people and businesses, including several stimulus measures targeting the private sector.²⁴²

Following the first strict lockdown, the government enhanced the healthcare response by increasing hospital capacity, the number of ICU beds, and the number of ventilators.²⁴³ The government also developed a monitoring and tracing strategy to track COVID-19 transmission, and established the National Epidemiology and Infection Disease Center to help prevent the spread of epidemics and infectious diseases. The government further developed a national vaccination programme²⁴⁴ which prioritized vulnerable groups, and provided infrastructure such as drive-through vaccination sites. An awareness campaign was developed to ensure people were informed of the programme. To ensure that no one was left behind, the vaccine was made available to everyone in the country (including citizens and refugees). As such, Jordan was one of the first countries to include refugees in its COVID-19 vaccination campaign.²⁴⁵

Jordan's adequate response to the pandemic enabled economic growth at a rate of 2.7% in the third quarter of 2021.²⁴⁶ Jordan wants to ensure that post-COVID-19 recovery plans and resilience-building will withstand future shocks. The recovery plans include the Government's Economic Priorities Program 2021-2023, which will support the growth of the private sector, increasing levels of employment and welfare. The programme puts forth three main objectives. The objectives are: enable the private sector to create jobs for Jordanians, stimulate local and foreign investments, and increase national exports of goods and services. The pillars are: improve the businesses and investment environment, enhance competition and increase employment, and support the tourism, agriculture, and industry sectors.

The 2022 National Employment Program is expected to provide 60,000 job opportunities. In addition, Jordan is striving to improve its pharmaceutical industries, focusing on medical equipment manufacturing and providing direct support to SMEs to ensure their recovery.²⁴⁷

At the local level, GAM is working on implementing the Amman Resilience Strategy and the Amman Climate Plan to mitigate the negative impacts of the COVID-19 pandemic.

242 Impact of COVID-19 on Enterprises in Jordan: One year into the pandemic, ILO (2021).

243 COVID-19 Crisis in Jordan: Response, Scenarios, Strategies, and Recommendations, Alqutob, R., Al Nsour, m, et al. (2020).

244 The National Vaccination Campaign to fight COVID-19 is carried out by the Ministry of Health and the National Centre for Security and Crisis Management. Any individual on Jordanian soil is eligible to receive the vaccine, and it is free of charge. Receiving the vaccine is not mandatory. UNHCR, COVID-19 Vaccine. See: <https://help.unhcr.org/jordan/en/frequently-asked-questions-unhcr/covid-19-vaccine/>.

245 Bylaw to establish National Epidemiology and Infectious Diseases Center published in Official Gazette, The Jordan Times (2020).

246 The Voluntary National Review of Jordan, Version 16/04/2022 (Unpublished).

247 Ibid.

3.2 Key Messages



This VLR sheds light on Amman as a national and regional centre for international cooperation. It highlights that the city is a significant beneficiary of international humanitarian and development aid that is effectively channelled through an adaptive governance system centred around the GAM municipal administration. The review finds that, over the last few decades, Amman has become a testing ground for innovative sustainability solutions. The effective removal of any barriers that may impede the evaluation and scaling up of good practices in the areas of urban planning, building, transport, energy, water, waste and climate action will significantly influence the development of the city in the years to come.

The VLR does not only discuss the city's actions and progress towards achieving the selected SDG targets based on available data, but also analyses the implications for policy and practice, in order to improve Amman's performance on SDG 3, SDG 7, SDG 9, SDG 11, SDG 13 and SDG 17 (see Chapter 2). Within this context, the following key messages were developed to guide the sustainable urbanization of Amman in the coming years and to emphasize the aspirations and commitment of GAM to accelerate progress toward the SDGs:

- Amman's commitment to the values and Goals of the 2030 Agenda for Sustainable Development and to the New Urban Agenda
 - Habitat III has been demonstrated through: (i) its policy formulation, which has increasingly become more aligned with the SDGs; (ii) the definition of comprehensive urban policies, strategies, and plans most notably the city's resilience, green, and climate action plans; (iii) its commitment to becoming climate-neutral by 2050; and (iv) the orientation towards greening the

local economy and modernizing the public sector.

Nevertheless, it is essential to further mainstream the SDGs into municipal policies, strategies, programmes, plans, budgets and partnerships in order to improve policy coherence for sustainable development, leaving no one behind. GAM's new Strategic Plan 2022-2026 harmonizes local development goals across different sectors to improve the delivery of urban infrastructure and services. The review of Amman's existing master plan, to make it more inclusive and people-centred, has the potential to achieve another significant milestone on this journey. There is a need to ensure equal access to urban infrastructure and services for all and to harmonize local development goals across sectors, and this is being realized through cross-sectoral, transformative urban services and infrastructure projects, and SDG-led partnerships.

Amman is proud of its cultural and social diversity, and GAM is determined to ensure equal access to urban infrastructure and services, including healthcare, energy, transport, housing, and green infrastructures (particularly open, green, and public spaces) for all, especially vulnerable communities. However, GAM is also encouraged to further develop and test innovative public participation and citizen engagement methods that are inclusive of women, young people and children, and to scale up existing good practices in the field of urban planning and across various municipal sectors, while developing a legislative framework that enables meaningful community participation. This will contribute to improving the quality of evidence-based policy and decision-making processes that leave no one and no place behind, and will enhance public sector accountability and transparency.

Amman's objective to become a smart and sustainable city can be realized through further improving the institutional capacities to design and deliver coordinated action on the SDGs, including but not limited to: (i) reinforced commitment to the Goals and values of the 2030 Agenda for Sustainable Development among municipal leaders; and (ii) a dedication to improving the alignment of municipal operations with the SDGs, including in relation to budgeting and resource allocation, which have the potential to be tied to the SDGs and their targets through SDG budgeting. In a country with a rapidly growing ICT sector, ICT-led transformation of municipal operations and services can further leverage public sector modernization, while ensuring equal access to municipal infrastructure and services for all.

- An evidence-based policy and decision-making process is essential for the successful transformation to a more sustainable Amman across all sectors, including healthcare, energy, industrial development, urban and transport planning, and beyond. The collection, efficient management, and processing of high-quality urban data—which is disaggregated by gender, age, disability, income, and other factors, and which sheds a light on the challenges facing women, young people, children, and other vulnerable groups—as well as its inclusion in the policy process, are all essential to ensure accurate definition, monitoring and implementation of development goals and objectives.

With dynamic city growth and industrialization, advancements in mapping the city's initiatives in line with the SDGs, local development objectives, and national goals, while simultaneously improving the interconnectivity and coordination of municipal operations, will pave the way for more efficient and effective

policy monitoring. This will allow the municipality to identify positive synergies and development accelerators, which are essential in order to collaboratively define innovative and transformative action with partners and communities, ultimately contributing to the enhanced measurement of progress towards the SDGs.

A strong data ecosystem, centred around the Amman Urban Observatory as the designated city data hub, will play a significant role in collecting data and evidence on Amman's development challenges. With improved internal capacity, support of and partnerships with an array of data providers—including, but not limited to, the National Statistics Office, academia, and utility providers—and the guidance of international urban data collection standards, the Amman Urban Observatory has the potential to become a strategic driver for the city's sustainability transformation by informing evidence-based policy processes as well as international cooperation and assistance initiatives.

Amman is successful at attracting foreign direct investments and development aid and has created strong bilateral and multilateral relationships with organizations and cities from across the world. The city is ready to improve its sustainability governance. It is determined to work closely with the national government and international community to implement an evidence-based international relations strategy, as well as to improve resource allocation for capacity building and urban infrastructure and services projects. By turning its attention inwards, toward developing and maintaining relationships and partnerships with other public sector institutions, businesses, non-governmental organizations, and academia in Amman and across Jordan, the city will leverage its knowledge, expertise, technologies,

and financial resources to further develop and test innovative solutions to accelerate progress towards the SDGs.

Developing and testing new approaches and methodologies for stakeholder consultations, citizen engagement, and participatory planning that leave no one and no place behind is essential in this process. These new approaches should rely on listening and learning from business partners and communities, including vulnerable groups and refugees, and incorporating them into the decision-making process. People-first approaches to public-private partnerships, which leverage the potential of both local communities and technologies to serve as a source of inspiration and drive development and progress, can further advance sustainability governance in Amman and beyond.

Amman has the potential to shape the investment environment by mapping, evaluating, and addressing administrative, organizational, and other obstacles, in close collaboration with national government and public sector institutions, businesses, local communities, and academic partners. Enabling public-private partnership legislation, innovative and green public procurement rules, and a healthy municipal budget can significantly contribute to the successful replication and scaling-up of good practices across various development sectors, and lay the ground for the effective work of Amman Vision, the city's investment agency.

The following guidelines can be instrumental in supporting this transformation to a more sustainable Amman. In relation to mainstreaming the SDGs:

- Connecting cities and communities with the Sustainable Development Goals

- Implementing SDG11 by connecting sustainability policies and urban-planning practices through ICTs
- Management of infrastructure assets for sustainable development
- Amman Spatial Profile
- A Guide to Circular Cities

For reinforcing evidence-based policy and decision-making processes in Amman:

- Guidelines on evidence-based policies and decision-making for sustainable housing and urban development
- Digital solutions for integrated city management and use cases
- Practical Guidebook on Data Disaggregation for the Sustainable Development Goals

To support in unlocking the new generation of partnerships for sustainable development in Amman:

- SDG Partnership Guidebook. United Nations and The Partnering Initiative (2022)
- Guiding Principles on People-First Public-Private Partnerships (PPPs) for the United Nations Sustainable Development Goals (UN SDGs) (2018)
- Enhancing innovation and participation in smart sustainable cities



Figure 40. East Amman Landscape (Source: GAM, 2022)



BIBLIOGRAPHY

100 Resilient Cities; GAM. (2017). Amman Resilience Strategy. Amman: GAM. Retrieved from: https://resilientcitesnetwork.org/downloadable_resources/Network/Amman-Resilience-Strategy-English.pdf

100 Resilient Cities. (2017). Amman's Resilience Journey. Retrieved from: <https://resilientcitesnetwork.org/networks/amman/>

Action Against Hunger UK; UNHCR. (2019). Vulnerability Assessment Framework: Population Study 2019. Amman: UNHCR. Retrieved from: <https://data.unhcr.org/en/documents/download/68856>

AECOM. (2021). Amman Green City Action Plan. London: AECOM. Available at: https://amman.jo/site_doc/AmmanGreen2021.pdf.

Ajlouni, Musa. (2011). Jordan Health System Profile, 2010. Philadelphia University Jordan. <https://doi.org/10.13140/RG.2.1.5182.3125>

Al Kharouf, A., Khaswana, H., AlHassan, S., & Hamdan, S. (2021). Public transportation review in the city of Amman. Birmingham: Birmingham University.

Al Qutob, R., Al Nsour, M., Tarawneh, M. R., Ajlouni, M., Khader, Y., Aqel, I., Kharabsheh, S., & Obeidat, N. (2020). COVID-19 Crisis in Jordan: Response, Scenarios, Strategies, and Recommendations. JMIR public health and surveillance, 6(3), e19332. <https://doi.org/10.2196/19332>

Al-Samydai, A., Al-Helli, I., Aburjai, T., & Aladwan, H. (2018). The Role of Information Resources on Building Health Awareness-Study Conduct in Amman Jordan. 1. 44-49.

Amam Ventures. (2022). How much do you know about women-led SMEs? Retrieved from Amam Ventures: <https://www.amamventures.com/insights>

Amman Vision. (2022). A Beacon of Health; Medical Tourism in Jordan: A Powerful Sector. Retrieved from: Amman Vision Investment & Development: <https://ammanvision.jo/a-beacon-of-health-medical-tourism-in-jordan-a-powerful-sector/>

Amman Chamber. (2022). Law of Licenses for Professions within the borders of Greater Amman Municipality. Retrieved from: Amman Chamber: <https://www.ammanchamber.org.jo/shoroq/2390.pdf>

Asian Development Bank; United Nations Statistics Division. (2021). Practical Guidebook on Data Disaggregation for the SDGs. Mandaluyong City: ADB. Retrieved from: https://unstats.un.org/unsd/statcom/52nd-session/documents/BG-3a-Practical_guidebook_on_data_disaggregation_for_the_SDGs-E.pdf

C40 Cities. (2021). Amman Urban Micro Lungs Initiative. Retrieved from C40 Cities: <https://www.c40.org/case-studies/amman-urban-micro-lungs-initiative/>

CDM Smith. (2020). Meeting Urban Challenges in Amman with a Smart City Plan. Retrieved from CDM Smith: <https://www.cdmsmith.com/en/Client-Solutions/Projects/Smart-Amman>

Bibliography

- Center For Strategic Studies; Ministry of Health. (2019). Noncommunicable Diseases Leading Causes of Death in Jordan - Survey. Retrieved from Center for Strategic Studies: <https://jcss.org/en/2178/noncommunicable-diseases-leading-cause-of-death-in-jordan-survey/>
- Deloitte; USAID. (2009). Allocating Industrial Land Use in Jordan: Brief Review of Initiatives. Amman: USAID. Retrieved from: https://usjkamp.s3.amazonaws.com/prod_uploads/system/resources/attachments/000/002/987/original/20090728-Allocating_Land_Use_in_Jordan-Geoff_Wright-F.pdf?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAJNKAKIDZBGBOKQA%2F20220602%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20220602T074351Z&X-Amz-Expires=10&X-Amz-SignedHeaders=host&X-Amz-Signature=a17b6886d0be1e6e6344a1d003bf634a50b8944a486046f59c4f8f2b6903c484
- Department of Statistics. (2017). Household Expenditures & Income Survey. Retrieved from: Department of Statistics: <http://dosweb.dos.gov.jo/economic/expenditures-income/>
- Department of Statistics; ICF. (2019). Jordan Population and Family Health Survey 2017-18. Amman: Department of Statistics. Retrieved from: <https://dhsprogram.com/pubs/pdf/FR346/FR346.pdf>
- Department of Statistics. (2020). Estimated Population for Some Selected Years. Amman: Department of Statistics. Retrieved from: http://dosweb.dos.gov.jo/DataBank/Population_Estimates/PopulationEstimates.pdf
- Department of Statistics. (2022). DOS. Retrieved from: Department of Statistics: <http://dosweb.dos.gov.jo>
- Developing a Preliminary Design for Flood Mitigation Measures and Performing a Flood Risk Assessment and Flood Hazard Mapping for Downtown Amman, Dar (2021).
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). (2020). Public Space & Gender in Amman. Amman: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Retrieved from: <https://www.giz.de/de/downloads/giz2021-0031en-public-space-gender-amman-jordan.pdf>
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). (2022). Improving green infrastructure in Amman. Retrieved from GIZ: <https://www.giz.de/en/worldwide/83767.html>
- Energy & Utilities. (2022). Developers weigh up Jordan's Aqaba-Amman water project. Retrieved from Energy & Utilities: <https://energy-utilities.com/developers-weigh-up-jordan-s-aqabaamman-water-news116979.html>
- Export.gov. (2017). Healthcare Resource Guide: Jordan. Retrieved from: Export.gov: https://2016.export.gov/industry/health/healthcareresourceguide/eg_main_108593.asp#:~:text=Jordan%20expects%20to%20reach%20300%2C000,patients%20from%20neighboring%20countries%20annually
- Fafo; International Labour Organization (ILO); UNDP. (2021). Impact of COVID-19 on Enterprises in Jordan: One year into the pandemic. Amman: Fafo. Retrieved from: https://www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/publication/wcms_813448.pdf

GCMCE. (n.d.). Global Covenant of Mayors for Climate & Energy. Retrieved from: <https://www.globalcovenantofmayors.org/>

Greater Amman Municipality. (2008). Metropolitan Growth: Summary Report, the Amman Plan. Amman: GAM. Retrieved from: <https://www.slideshare.net/AmmanInstitute/amman-plan-summary-report>

Greater Amman Municipality. (n.d.). Biogas Project / Ghabawi Landfill. (Unpublished). Amman: GAM.

Greater Amman Municipality. (n.d.). Electronic Transformation of GAM. (2020). Retrieved from GAM: <https://ammancity.gov.jo/ar/resource/snews.aspx?id=874D216A-2089-4846-B7B2-56A5642D9681>

Greater Amman Municipality. (n.d.). GAM Achievements 2018 - 2021. (Unpublished). Amman: GAM.

Greater Amman Municipality. (2022). GAM Strategic Plan 2022-2026. Amman: GAM. Retrieved from: https://www.ammancity.gov.jo/site_doc/plan062022.pdf

Greater Amman Municipality. (2020). Launching the institutional performance report and Amman's resilience in the face of the Corona-virus. Retrieved from GAM: <https://amman.jo/ar/resource/snews.aspx?id=6825C88E-E665-46A0-A3B1-600F8B7FDB8D>

Greater Amman Municipality. (n.d.). Linking the goals and projects of GAM to the SDGs 2022 – 2026. (Unpublished). Amman: GAM.

Greater Amman Municipality. (2022). Electronic Services Provided by GAM. Retrieved from: Greater Amman Municipality: <https://ammancity.gov.jo/ar/eservices/eservices.aspx>

Greater Amman Municipality. (2022). GAM's Vision and Mission. Retrieved from: Greater Amman Municipality: <https://amman.jo/ar/gam/about.aspx>

Greater Amman Municipality. (2022). Municipality of Greater Amman. Retrieved from: Greater Amman Municipality: https://portal.jordan.gov.jo/wps/wcm/connect/gov/eGov/Government+Ministries+_+Entities/Municipality+of+Greater+Amman/General+Information

Greater Amman Municipality. (n.d.). Amman Resilient City. Retrieved from Greater Amman Municipality: <https://www.ammancity.gov.jo/ar/gam/100resilientcities.aspx>

Greater Amman Municipality. (n.d.). Women's Creative Hub 2020-2022. (unpublished). Amman: GAM.

Hammad, E.A., Alabbadi, I., Taissir, F. et al. (2022). Hospital unit costs in Jordan: insights from a country facing competing health demands and striving for universal health coverage. *Health Econ Rev* 12, 11. <https://doi.org/10.1186/s13561-022-00356-0>

International Growth Center; Greater Amman Municipality. (2020). Amman's Urban Response to COVID-19 & Institutional Performance. Amman: IGC. Retrieved from: <https://www.theigc.org/wp-content/uploads/2020/11/IGC-Presentation-Amman.pdf>

Bibliography

- International Trade Administration. (2021). Jordan - Information and Communication Technology. Retrieved from International Trade Administration: <https://www.trade.gov/country-commercial-guides/jordan-information-and-communication-technology>
- JFRA News. (2019). Smart Mobility for Better Cities Conference Kicks Off. Retrieved from: JFRA News: <http://www.jfranews.com.jo/more-201417-16-%D8%A7%D9%86%D8%B7%D9%84%D8%A7%D9%82-%D9%81%D8%B9%D8%A7%D9%84%D9%8A%D8%A7%D8%AA-%D9%85%D8%A4%D8%AA%D9%85%D8%B1-%D8%AA%D9%86%D9%82%D9%84-%D8%B0%D9%83%D9%8A-%D9%84%D9%85%D8%AF%D9%86-%D8%A7%D9%81%D8%B6%D9%84>
- Jordan News Agency. (2019). Launching a biogas project and generating electricity from waste Retrieved from: JNA: <https://www.petra.gov.jo/Include/InnerPage.jsp?ID=105545&lang=ar&name=news>
- Jordan Response Plan. (2022). The Jordan Response Plan For the Syria Crisis. Retrieved from: JRP: <http://www.jrp.gov.jo/>
- Jordan Strategy Forum. (2020). Enhancing the Competitiveness of the Health Sector in Jordan. Amman: Jordan Strategy Forum. Retrieved from: <http://jsf.org/sites/default/files/Enhancing%20the%20Competitiveness%20of%20the%20Health%20Sector%20in%20Jordan.pdf>
- Level UP. (2022). Advancing Jordanian Industries. Retrieved from Level UP: <https://levelupjordan.org/>
- Medical Tourism. (2020). Medical Tourism Index. Retrieved from: Medical Tourism: <https://www.medicaltourism.com/mti/home>
- Ministry of Digital Economy and Entrepreneurship. (2018). Information Technology in Jordan. Retrieved from: Ministry of Digital Economy and Entrepreneurship: https://www.modee.gov.jo/EN/Pages/Information_technology_in_Jordan
- Ministry of Digital Economy and Entrepreneurship. (2021). The National Digital Transformation Strategy & Implementation Plan. Amman: Ministry of Digital Economy and Entrepreneurship. Retrieved from: https://www.modee.gov.jo/ebv4.0/root_storage/en/eb_list_page/dts-2021-eng.pdf
- Ministry of Health. (2021). Annual Statistical Report. Retrieved from: Ministry of Health: https://moh.gov.jo/ebv4.0/root_storage/ar/eb_list_page/report_2021.pdf
- Ministry of Higher Education. (2022). Higher Education in Jordan. Retrieved from: Ministry of Education: https://mohe.gov.jo/EN/Pages/Higher_Education_in_Jordan
- Ministry of Energy & Mineral Resources. (2019). Energy 2019 - Facts and Figures. Amman: Ministry of Energy & Mineral Resources. Retrieved from: https://www.memr.gov.jo/ebv4.0/root_storage/en/eb_list_page/bruchure_2019.pdf
- Ministry of Environment. (2018). Ambient Air Quality Monitoring Report in (Amman-Irbid-Zarqa). Amman: Ministry of Environment. Retrieved from: http://moenv.gov.jo/ebv4.0/root_storage/en/eb_list_page/2018_moe_aqm_network_year_report_-english.pdf

Ministry of Environment. (2013). The National Climate Change Policy of the Hashemite Kingdom of Jordan. Amman: Ministry of Environment. Retrieved from: <http://extwprlegs1.fao.org/docs/pdf/jor152635.pdf>

Ministry of Environment. (2021). Updated Submission of Jordan's 1st Nationally Determined Contribution (NDC). Amman: Ministry of Environment. Retrieved from: <http://extwprlegs1.fao.org/docs/pdf/jor205905E.pdf>

Ministry of Environment; GAM. (2019). The Amman Climate Plan (a vision for 2050 Amman). Amman: Ministry of Environment. Available at: <https://documents1.worldbank.org/curated/en/816961617187012025/pdf/The-Amman-Climate-Plan-A-Vision-for-2050-Amman.pdf>

Ministry of Foreign Affairs NL. (2018). Climate Change Profile Jordan. Retrieved from Ministry of Foreign Affairs: https://rho.emro.who.int/sites/default/files/Profiles-briefs-files/EMROPUB_EN_19603-JOR.pdf

Ministry of Health; The National Maternal Mortality Surveillance & Response System; USAID. (2019). Jordan's National Maternal Mortality Report 2019. Amman: Ministry of Health. Retrieved from: <https://kaa.moh.gov.jo/Echobusv3.0/SystemAssets/c17233e7-1d70-4be9-a3a2-45ab29ae37c8.pdf>

Ministry of Planning and International Cooperation. (n.d.). Foreign Assistance. Retrieved from MoPIC: https://mop.gov.jo/EN/Pages/Foreign_Assistance

Ministry of Planning and International Cooperation. (2021). The Indicative Executive Programme for the Government of Jordan 2021-2024. Amman: MoPIC. Retrieved from MoPIC: http://mol.gov.jo/ebv4.0/root_storage/ar/eb_list_page/%D8%A7%D9%84%D8%A8%D8%B1%D9%86%D8%A7%D9%85%D8%AC_%D8%A7%D9%84%D8%AA%D9%86%D9%81%D9%8A%D8%B0%D9%8A_%D8%A7%D9%84%D8%AA%D8%A3%D8%B4%D9%8A%D8%B1%D9%8A_%D9%84%D9%84%D8%AD%D9%83%D9%88%D9%85%D8%A9_2024-2021_%D8%A7%D9%84%D8%AC%D8%B2%D8%A1_%D8%A7%D9%84%D8%AB%D8%A7%D9%86%D9%8A_%D8%A7%D9%84%D8%A8%D8%B1%D9%86%D8%A7%D9%85%D8%AC_%D8%A7%D9%84%D8%AA%D9%81%D8%B5%D9%8A%D9%84%D9%8A.pdf

Ministry of Municipal Affairs; Cities & Villages Development Bank. (2014). Development of a National Strategy to Improve the Municipal Solid Waste Management Sector in the Hashemite Kingdom of Jordan. Amman: MMA and CVDB. Retrieved from: [https://www.mola.gov.jo/ebv4.0/root_storage/ar/eb_list_page/\(1st_draft_report\).pdf](https://www.mola.gov.jo/ebv4.0/root_storage/ar/eb_list_page/(1st_draft_report).pdf)

Ministry of Tourism & Antiques. (2021). Jordan Tourism Strategy 2021 to 2025. Amman: Ministry of Tourism & Antiques. Retrieved from: https://procurement-notices.undp.org/view_file.cfm?doc_id=267337

National Electric Power Company. (2020). NEPCO Annual Report 2020: Amman: National Electric Power Company. Retrieved from: https://www.nepco.com.jo/store/DOCS/web/2020_EN.pdf

Netherlands Organization for Scientific Research. (2020). Policy brief, Raising community awareness on Sexual and Reproductive Health in Jordan. NWO. Retrieved from: <https://www.wo.nl/nl/nieuws/2020/03/policy-brief-raising-community-awareness-on-sexual-and-reproductive-health-in-jordan>

Bibliography

nwo.nl/sites/nwo/files/media-files/srhr_-_policy_brief_-_jordan_project_-_interactive_theatre_dejong.pdf

OECD. (2019). SME Policy Effectiveness in Jordan. User Guide 2: Effective monitoring and evaluation of SMEs. Paris: OECD Publishing. Retrieved from: https://issuu.com/oecd.publishing/docs/sme-policy-effectiveness-in-jordan-_e525e41cd9d49d

Partnership for Healthy Cities. (n.d.). Participating Cities. Retrieved from: PHC: <https://partnershipforhealthycities.bloomberg.org/cities/>

Private Hospitals Association Jordan. (n.d.). Healthcare System Overview. Retrieved from: PHA Jordan: <https://phajordan.org/EN-article-3809->

Sadaqa. (2018). Gender in Public Transportation. A Perspective of Women Users of Public Transportation. Amman: Sadaqa. Retrieved from: <http://library.fes.de/pdf-files/bueros/amman/15221.pdf>

The Business Report. (2018). The Arab World's Top Content Creator Takes on Innovation. Retrieved from: The Business Report: <http://www.the-businessreport.com/article/the-arab-worlds-top-content-creator-takes-on-innovation/>

The Economic Policy Council. (2017). Jordan Economic Growth Plan 2018-2022. Amman. Retrieved from: <https://www.ssif.gov.jo/UploadFiles/JEGProgramEnglish.pdf>

The Hashemite Kingdom of Jordan. (2017). Jordan's Way to Sustainable Development; First National Voluntary Review on the Implementation of the 2030 Agenda. Amman. Retrieved from: <https://sustainabledevelopment.un.org/content/documents/16289Jordan.pdf>

The Hashemite Kingdom of Jordan. (2022). Second National Voluntary Review on the Implementation of the 2030 Agenda. Version 16/04/2022 (Unpublished). Amman.

The High Health Council. (2015). The National Strategy for the Health Sector in Jordan 2015-2019. Amman: High Health Council. Retrieved from: <http://www.hhc.gov.jo/uploadedimages/The%20National%20Strategy%20for%20Health%20Sector%20in%20Jordan%202015-2019.pdf>

The Jordan Times. (2019). GAM cites challenges to expanding parks as WHO standards reveal 'great shortage' of green areas. Retrieved from The Jordan Times: <https://www.jordantimes.com/news/local/gam-cites-challenges-expanding-parks-who-standards-reveal-%E2%80%98great-shortage%E2%80%99-green-areas>

The Jordan Times. (2020). Bylaw to establish National Epidemiology and Infectious Diseases Centre published in Official Gazette. Retrieved from The Jordan Times: <https://www.jordantimes.com/news/local/bylaw-establish-national-epidemiology-and-infectious-diseases-centre-published-official>

The Jordan Times. (2020). Jordan drops in global smart city rankings. Retrieved from The Jordan Times: <https://www.jordantimes.com/news/local/jordan-drops-global-smart-city-rankings#:~:text=AMMAN%20E2%80%94%20Jordan%20ranked%20fourth%20in,cities%20for%20the%20year%202020>

The Jordan Times. (2021). Traffic accidents with injuries 6 times more frequent among men – report. Retrieved from: The Jordan Times: <https://www.jordantimes.com/news/local/traffic-accidents-injuries-6-times-more-frequent-among-men-%E2%80%94-report>

The Jordan Times. (2022). Gov't, SJIF sign MoU to explore National Railway Network investments. Retrieved from: The Jordan Times: <https://www.jordantimes.com/news/local/govt-sjif-sign-mou-explore-national-railway-network-investments>

The Jordanian National Commission for Women. (2017). Sexual Harassment in Jordan. Amman: Jordanian National Commission for Women. Retrieved from: <https://women.jo/sites/default/files/SystemAssets/fb0c321a-42d2-4987-9211-1883a36a4dee.pdf>

ThinkWell; UNICEF. (2016). Analysing Equity in Health Utilization and Expenditure in Jordan. Retrieved from: https://thinkwell.global/wp-content/uploads/2016/10/Thinkwell-Jordan-Report-FINAL_August31.pdf

UNDP. (n.d.). SURE Project. (Unpublished). Amman: UNDP.

UNESCWA. (2020). Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region “REGEND”. Retrieved from United Nations Economic and Social Commission for Western Asia: <https://archive.unescwa.org/sub-site/renewable-energy-rural-arab-region-regend>

UN-Habitat and UCLG. (2020). Guidelines for Voluntary Local Reviews Volume 1: A Comparative Analysis of Existing VLRs. Barcelona: UCLG. Retrieved from: https://unhabitat.org/sites/default/files/2020/07/uclg_vlrlab_guidelines_july_2020_final.pdf

UN-Habitat and UCLG. (2021). Guidelines for Voluntary Local Reviews Volume 2: Towards a New Generation of VLRs: Exploring the local-national link. Barcelona: UCLG. Retrieved from: https://unhabitat.org/sites/default/files/2021/07/vlrguidelines_vol2.pdf

UN-Habitat. (2022). Amman Spatial Profile. Amman: UN-Habitat. Retrieved from: https://jordan.un.org/sites/default/files/2022-04/220411-final_amman_profile_0.pdf

UN Jordan. (2020). The United Nations Country Team Common Country Assessment of the Hashemite Kingdom of Jordan. Amman: UN Jordan. Retrieved from: <https://jordan.un.org/sites/default/files/2020-04/CCA-%20Feb122017.pdf>

UN Women. (2018). Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development. New York: UN Women. Retrieved from: <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2018/SDG-report-Gender-equality-in-the-2030-Agenda-for-Sustainable-Development-2018-en.pdf>

UN Women; REACH. (2019). Meta-analysis on women participation in labour force in Jordan. Amman: UN Jordan. Retrieved from: https://jordan.un.org/sites/default/files/2020-11/Meta_LR_021120%20%28003%29.pdf

UNDP Jordan. (2022). Unleashing the Power of Women in Climate Action: Equality today for a sustainable tomorrow. Retrieved from: UNDP Jordan: <https://www.jo.undp.org/content/jordan/en/home/stories/unleashing-the-power-of-women-in-climate-action--equality-today-.html>

Bibliography

- UNDP. (2021). Jordan National Defence Law and COVID-19. Amman: UN Jordan. Retrieved from: https://jordan.un.org/sites/default/files/2021-02/UNDP_%20DEFENCE%20LAW.pdf
- UN-Habitat. (2015). Jordan Affordable Housing Programme Report. Amman: UN-Habitat. Retrieved from: <https://unhabitat.org/sites/default/files/download-manager-files/JAH%20%2003%20May%202015.pdf>
- UN-Habitat. (2022). Jordan National Urban Policy. Amman: UN-Habitat.
- UN-Habitat. (2021). Mainstreaming Housing into Jordan's National Urban Policy Thematic Guide. Amman: UN-Habitat. Retrieved from: https://unhabitat.org/sites/default/files/2022/02/housing_thematic_guide_en.pdf
- UN-Habitat. (2021). Mainstreaming Local Economic Development into Jordan National Urban Policy Thematic Guide. Amman: UN-Habitat. Retrieved from: https://unhabitat.org/sites/default/files/2022/02/led_thematic_guide_en.pdf
- UN-Habitat. (2021). Roadmap for Localizing the SDGs: Implementation and Monitoring at Subnational Level. Retrieved from UN-Habitat: https://sustainabledevelopment.un.org/content/documents/commitments/818_11195_commitment_ROADMAP%20LOCALIZING%20SDGS.pdf
- UN-Habitat. (2021). Strengthening urban resilience in Amman, Jordan, to mitigate flashfloods and protect vulnerable communities. Retrieved from UN-Habitat: <https://unhabitat.org/strengthening-urban-resilience-in-amman-jordan-to-mitigate-flashfloods-and-protect-vulnerable>
- UNHCR. (2021). Help Jordan. COVID-19 Vaccine. Retrieved from UNHCR: <https://help.unhcr.org/jordan/en/frequently-asked-questions-unhcr/covid-19-vaccine/>
- UNHCR. (2022). Total Registered Syrian Refugees. Operational Data Portal: Refugee Situations. Retrieved from UNHCR: <https://data.unhcr.org/en/situations/syria/location/36>
- UNICEF. (2021). Children in Jordan at Risk of the Impacts of the Climate Crisis. Retrieved from UNICEF: <https://www.unicef.org/jordan/press-releases/children-jordan-risk-impacts-climate-crisis-unicef>
- UNICEF. (2022). Child Friendly Cities Initiatives: Jordan. Retrieved from UNICEF: [https://childfriendlycities.org/jordan/#:~:text=The%20Greater%20Amman%20Municipality%20\(GAM,to%20children%20in%20greater%20Amman](https://childfriendlycities.org/jordan/#:~:text=The%20Greater%20Amman%20Municipality%20(GAM,to%20children%20in%20greater%20Amman).
- UNICEF; Greater Amman Municipality. (2022). Impacts of Jordan's New Electricity Tariff Reform on Household and Business Sectors. (Unpublished). Amman: GAM.
- UNICEF Jordan. (2017). The Cost and Financial Impact of Expanding the Civil Insurance Program to Vulnerable Jordanians and Syrian Refugees. Amman: UNICEF Jordan. Retrieved from: <https://www.unicef.org/jordan/media/2671/file/Cost%20and%20financial%20impact%20Study.pdf>
- United Nations. (2022). Goal 3: Ensure Healthy Lives and Promote Well-Being for All At All Ages. Retrieved from United Nations: <https://www.un.org/sustainabledevelopment/health/>

United Nations. (2017). New Urban Agenda. Quito: Habitat III. Retrieved from: <https://habitat3.org/wp-content/uploads/NUA-English.pdf>

UNRWA. (2022). Health in Jordan. Retrieved from: UNRWA: <https://www.unrwa.org/activity/health-jordan>

Urba Net. (2021). How the Lack of Public Transport is Keeping Women in Jordan at Home. Retrieved from URBANET: <https://www.urbanet.info/jordan-public-transport-women-work-force/>

US AID. (2022). Quality Health Care. Retrieved from: USAID: <https://www.usaid.gov/jordan/quality-health-care>

Wamda. (2015). Renewable energy and gender equality tackled in Amman conference. Retrieved from Wamda: <https://www.wamda.com/memakersge/2015/05/renewable-energy-and-gender-equality-tackled-in-amman-conference>

WCCD. (2016). WCCD Foundation Report #8: Amman, Jordan. Retrieved from: <http://news.dataforcities.org/2016/11/wccd-foundation-report-7-amman-jordan.html>

WCCD. (2022). World Council on City Data. Retrieved from: <https://www.dataforcities.org/>

World Bank Group. (2018). Amman, Jordan Comprehensive Climate Plans. World Bank Group. Retrieved from: <https://documents1.worldbank.org/curated/en/520781605297422379/pdf/Metropolitan-Amman-Comprehensive-Climate-Plans.pdf>

World Bank Group. (2018). Jordan Housing Sector Review. World Bank Group. Retrieved from: <https://documents1.worldbank.org/curated/en/855101555960778525/pdf/Jordan-Housing-Sector-Assessment-Housing-Sector-Review.pdf>

World Bank Group. (2019). The Amman Climate Plan (a vision for 2050 Amman). Washington, D.C.: World Bank Group. Available at: <https://documents1.worldbank.org/curated/en/816961617187012025/pdf/The-Amman-Climate-Plan-A-Vision-for-2050-Amman.pdf>

World Bank Group. (2020). Doing Business Archive. Retrieved from: The World Bank: https://archive.doingbusiness.org/en/data/exploreeconomies/jordan-db_ge

World Bank Group. (2020). Jordan: US\$200 million to improve digital services and access to jobs for youth and underserved communities. Retrieved from World Bank Group: <https://www.worldbank.org/en/news/press-release/2020/03/20/jordan-us200-million-to-improve-digital-services-and-access-to-jobs-for-youth-and-underserved-communities>

World Bank Group. (2021). Jordan Support to Private Sector Employment and Skills. World Bank Group. Retrieved from: <https://documents1.worldbank.org/curated/en/428271640181364007/pdf/Jordan-Support-to-Private-Sector-Employment-and-Skills-Project.pdf>

World Bank Group. (2022). GDP per Capita (Current US\$) – Jordan. Retrieved from: The World Bank: <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=JO>

Bibliography

- World Bank Group. (2022). Jordan Inclusive, Transparent and Climate Responsive Investments Program For Results. Retrieved from: <https://documents1.worldbank.org/curated/en/099835005082217408/pdf/P17566207d4b500fb0b2210ae7200bd54e8.pdf>
- World Economic Forum. (2017). The Global Competitiveness Report 2017-2018. Geneva: World Economic Forum. Available at: <https://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%20%932018.pdf>
- World Health Organization. (2013). WHO proMIND Profiles on Mental Health in Development: Hashemite Kingdom of Jordan. Geneva: WHO. Retrieved from: <https://www.mhinnovation.net/sites/default/files/downloads/innovation/reports/WHO-MIND-Mental-Health-in-Development.pdf>
- World Health Organization. (2015). Jordan Health Profile. Amman: WHO. Retrieved from: https://rho.emro.who.int/sites/default/files/Profiles-briefs-files/EMROPUB_EN_19603-JOR.pdf
- World Health Organization. (2021). Ambient (outdoor) air pollution. Retrieved from: WHO: [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)
- World Health Organization. (n.d.). Global HIV Programme: Pre-exposure prophylaxis (PrEP). Retrieved from: WHO: <https://www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/hiv/prevention/pre-exposure-prophylaxis#:~:text=Pre%2Dexposure%20prophylaxis%20or%20%E2%80%9CPrEP,of%20acquisition%20of%20HIV%20infection.>
- World Health Rankings. (2022). Life Expectancy Middle East. Retrieved from: World Health Rankings: <https://www.worldlifeexpectancy.com/life-expectancy-middle-east>

Annex 1 . Statistical Annex



This annex presents the statistical data used to discuss the city's progress towards achieving the SDGs with reference to SDG, SDG target, and SDG indicator (the three elements comprise the official UN SDG monitoring framework), and "local indicator." The local indicator is the indicator used for SDG reporting at the local level and is detailed in terms of data provider, unit, value and year. The last column indicates where the data obtained refers to Amman specifically (local) or depicts the situation at the country level (national). The reason for this distinction is the limited access to data about Amman, meaning that national averages had to be used in some cases to complete data gaps (as discussed in the methodology section in Chapter 1).

Additionally, in this Statistical Annex, the data source is marked through a hyperlink, and in relation to the data provider. Data source means a publicly available document (e.g. a report or database), where the value of the indicator can be found. The absence of a hyperlink means that the data provider did not cite the source and provided the data through email correspondence. In the case of data from the Amman Urban Observatory or GAM, a detailed explanation was provided on the methodology for calculating specific indicator data. This data is not officially published but is included on the portal of the World Council on City Data after it is audited and assessed by the council.

The data sources include the Global Urban Monitoring Framework (UMF) and the Global Urban Indicators database from UN-Habitat, and the Amman Urban Observatory indicator set from the World Council on City Data.

Table 8. Statistical Annex per SDG

SDG	SDG target	SDG indicator	Local indicator
3 Good health and well-being	3.1: By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.2: Proportion of births attended by skilled health personnel Other targets	Proportion of births in all health facilities National maternal mortality rate Births attended by skilled personnel
	3.2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	3.2.1: Under-five mortality 3.2.2: Neonatal mortality	Under-5 mortality per 1,000 live births Proportion of vaccinated children
	3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases	Other targets	Life expectancy at birth Cases of pulmonary tuberculosis in Amman Cases of chickenpox Number of people with HIV nationally Deaths due to AIDS
	3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	3.4.2: Suicide mortality rate	Suicide mortality rate in Amman Deaths from non-communicable diseases

Data provider	Unit	Value	Year available	National or local
GUO (UMF)	Percentage of all births	97.30%	2017	National
UNAIDS	Cases per 100,000 live births	32	2019	National
GUO (UMF)	Percentage of all births	97.30%	2017	Local
AUO (WCCD)	Nominal value	16	2020	Local
GUO (UMF)	Percentage of population	84.40%	2017	Local
AUO (WCCD)	Years (nominal value)	73.5	2019	Local
Ministry of Health (unpublished)	Cases per 100,000 population	220 257	2016 2019	Local
	Number of cases (nominal value)	6,211 3,515	2018 2019	Local
UNAIDS (unpublished)	Number of cases (nominal value)	390	2020	National
	Number of deaths	Less than 100	2020	National
GUO (UMF)	Cases per 100,000 deaths	1.6	2019	Local
UNAIDS	Percentage of total deaths	78%	2019	National

Bibliography

SDG	SDG target	SDG indicator	Local indicator
3 Good health and well-being	3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents	3.6.1: Death rate due to road traffic injuries	Transportation fatalities
	3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination	3.9.2: Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)	Transportation fatalities nationwide
			Safely managed sanitation services and hand-washing facilities with soap and water
	3.c: Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States	3.c.1: Health worker density and distribution	Safely managed drinking water services
			Number of physicians
			Number of nursing and midwifery personnel
			Number of mental health practitioners

Data provider	Unit	Value	Year available	National or local
AUO (WCCD)	Cases per 100,000 population	4.75	2019	Local
GUO (UMF)	Cases per 100,000 population	24.4	2016	Local
PSD	Nominal value	461 643	2020 2019	National
Global Urban Indicators database	Percentage of population	99.90%	2018	Local
	Percentage of population	100%	2018	Local
	Number per 100,000 population	189.2648	2018	Local
	Number per 100,000 population	4.925	2019	Local
	Number per 100,000 population	4.2987	2020	Local

SDG	SDG target	SDG indicator	Local indicator
7 Affordable and Clean Energy	7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1: Proportion of population with access to electricity	Average length of electrical interruptions (in hours)
			Energy consumption of public buildings per year (kWh/m ²)
			Percentage of city population with authorized electrical service
			Total electrical energy use per capita (kWh/year)
			Total residential electrical energy use per capita (kWh/year)
			Cost of energy consumed
	7.2: By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1: Renewable energy share in the total final energy consumption	Percentage of total energy derived from renewable sources, as a share of the city's total energy consumption
	7.3: By 2030, double the global rate of improvement in energy efficiency	Other indicators	Per capita consumption of energy

Data provider	Unit	Value	Year available	National or local
The Ministry of Energy and Mineral Resources	Million JD	1.21	2021	Local
The Ministry of Energy and Mineral Resources	Million JD	1.23	2021	Local
The Ministry of Energy and Mineral Resources	Million JD	275.82	2016	Local
The Ministry of Energy and Mineral Resources	Million JD	99.8	2020	Local
The Ministry of Energy and Mineral Resources	Million JD	1866	2020	Local
The Ministry of Energy and Mineral Resources	Million JD	787.8592	2019	Local
The Ministry of Energy and Mineral Resources	Million JD	4,500	2014	National
The Ministry of Energy and Mineral Resources	Million JD	2,500	2015	National
The Ministry of Energy and Mineral Resources	Million JD	1,900	2016	National
The Ministry of Energy and Mineral Resources	Million JD	2,400	2017	National
The Ministry of Energy and Mineral Resources	Million JD	2,400	2018	National
AUO (WCCD)	Percentage %	2.8516	2020	Local
The Ministry of Energy and Mineral Resources	Energy in kWh	2,310	2014	Local
The Ministry of Energy and Mineral Resources	Energy in kWh	1,701	2018	Local
AUO (WCCD)	Energy in kWh	1,659	2019	Local

SDG	SDG target	SDG indicator	Local indicator
9 Industry, Innovation and Infrastructure	<p>9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise the industry's share of employment and gross domestic product, in line with national circumstances, and double its share in the least developed countries</p>	<p>Other indicators</p>	<p>Manufacturing, value added</p>
	<p>9.3: Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets</p>	<p>Other indicators</p>	<p>Number of establishments with legal status, by governorate Total share of manufacturing employment in Jordan Unemployment rate in Jordan</p>

Data provider	Unit	Value	Year available	National or local
World Development indicators	Percentage of G D P	17.27%	2020	National
Census of Establishments	Nominal value	Amman 74,877 Zarqa 24,416 Irbid 26,145 Balqa 11,291	2018	Local
DoS	Percentage	10%	2020	National
Jordan's Way to Sustainable Development; First VNR	Percentage	15.28%	2015	National
World Bank	Percentage	24.80%	2021	National
	Percentage	22.60%	2021	National
	Percentage	30.30%	2021	National
UN-Habitat (2021)	Percentage	13	2015	Local
UN-Habitat	Percentage	19.8	2019	Local
	Percentage	27	2019	Local
Jordan Chamber of Industry	Percentage	99.40%	2021	National
AUO (WCCD)	Per 100,000 inhabitants per year	0.6001	2021	Local

Bibliography

SDG	SDG target	SDG indicator	Local indicator
9 Industry, Innovation and Infrastructure	9.c: Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in the least developed countries by 2020	9.c.1: Proportion of population covered by a mobile network, by technology	Number of cell phone connections Number of internet connections Number of landline phone connections
11 Sustainable Cities and Communities	11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	11.1.1: Proportion of urban population living in slums, informal settlements or inadequate housing	Number of housing units owned Number of housing units rented Number of homeless Share of population living in informal housing
11 Sustainable Cities and Communities	11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	11.2.1: Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities	Percentage of commuters using a travel mode other than a personal vehicle Public transportation as a mode of transportation in Amman Taxis as a mode of transportation in Amman Buses as a mode of transportation in Amman Cost of mobility

Data provider	Unit	Value	Year available	National or local
AUO (WCCD)	Per 100, 000 population	100,099	2016	Local
	Per 100, 000 population	9,825.41	2020	Local
	Per 100, 000 population	5,031.98	2020	Local
DoS' Household Expenditures & Income Survey	Percentage	60.40%	2017	Local
	Percentage	30.80%	2017	Local
AUO (WCCD)	Per 100,000 population	16.9135	2020	Local
Global Urban Indicators database	Percentage	17.40%	2020	Local
AUO (WCCD)	Percentage	49%	2019	Local
UN-Habitat	Percentage	13%	2021	Local
UN-Habitat	Percentage	8%	2021	Local
UN-Habitat	Percentage	5%	2021	Local
UN-Habitat	Percentage (of household's income)	25-30%	2021	Local

Bibliography

SDG	SDG target	SDG indicator	Local indicator
	11.6. By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	11.6.1: Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities 11.6.2: Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)	Percentage of city population with regular solid waste collection (residential) Total solid waste generation Fine particulate matter (PM2.5) concentration in Amman Particulate matter (PM10) concentration in Amman Particulate matter (PM10) concentration - Jordan national standard
		Other indicators	NO2 (nitrogen dioxide) concentration - Jordan national standard NO2 (nitrogen dioxide) concentration in Amman O3 (ozone) concentration - Jordan national standard O3 (ozone) concentration in Amman SO2 (sulphur dioxide) concentration - Jordan national standard SO2 (sulphur dioxide) concentration in Amman

Data provider	Unit	Value	Year available	National or local
AUO (WCCD)	Percentage	97%	2020	Local
AUO (WCCD)	Kg/year per capita	379.6	2021	Local
AUO (WCCD)	µg/m3	19 µg/m3	2020	Local
AUO (WCCD)	µg/m3	46.3 µg/m3	2020	Local
AUO (WCCD)	µg/m3	70 µg/m3	2020	National
AUO (WCCD)	ppb	50 ppb	2020	National
AUO (WCCD)	ppb	23.5 ppb	2020	Local
AUO (WCCD)	ppb	50 ppb	2020	National
AUO (WCCD)	ppb	25.1 ppb	2020	Local
AUO (WCCD)	ppb	40 ppb	2020	National
AUO (WCCD)	ppb	8.7 ppb	2020	Local

Bibliography

SDG	SDG target	SDG indicator	Local indicator
11 Sustainable Cities and Communities	11.7 By 2030, provide universal access to safe, inclusive, and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	11.7.1: Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities	Annual number of trees planted Green area (hectares) Park area per capita Number of parks Area of public parks Access of urban area to parks within 15 mins Access of urban area to parks within 30 mins

Data provider	Unit	Value	Year available	National or local
AUO (WCCD)	per 100,000 population	755.2219	2020	Local
AUO (WCCD)	per 100,000 population	31.7999	2020	Local
UN-Habitat	m2	2.5 m2	2021	Local
UN-Habitat	Nominal value	189	2021	Local
UN-Habitat	m2	3,811	2021	Local
UN-Habitat	Percentage	72.50%	2021	Local
UN-Habitat	Percentage	92.80%	2021	Local

Annex 2 . General Information on Amman



Table 9. General Information on Amman

The City of Amman

Number of regions	22 regions
Administrative boundary	7579.2 km2 (GAM Capital Governorate) ²⁴⁸
Population	4,007,526 persons (GAM Capital Governorate) ²⁴⁹
Number of males	2,085,704 persons
Percentage of males	53.4% (2021)
Number of females	1,822,419 persons
Percentage of females	46.6% (2021)
Population density	528.8 inhabitants per square kilometer (GAM Capital Governorate) ²⁵⁰
Number of families	979,560 families
Percentage of city's population from the Kingdom of Jordan	36% (own calculation)

²⁴⁸ Source: The Capital Governorate. The Ministry of Interior the Hashemite Kingdom of Jordan: https://moi.gov.jo/EN>ListDetails/Governorates_and_Sectors/57/1 Accessed 29 09 2022

²⁴⁹ Source: The Capital Governorate. The Ministry of Interior the Hashemite Kingdom of Jordan: https://moi.gov.jo/EN>ListDetails/Governorates_and_Sectors/57/1 Accessed 29 09 2022

²⁵⁰ Source: The Capital Governorate. The Ministry of Interior the Hashemite Kingdom of Jordan: https://moi.gov.jo/EN>ListDetails/Governorates_and_Sectors/57/1 Accessed 29 09 2022

Population age (0-14)	31.27% (2021)
Population age (25-64)	44.83% (2021)
Life expectancy	74 (2019)
Illiteracy rate	4.20%
Percentage of refugees among city's population	36.25% (2015)
Annual average temperature	19.2 C (2017)
Climate	Mediterranean climate (dry)

Annex 3. Linkages Between National Objectives and GAM's Strategic Objectives



Table 10. Linkages Between National Objectives and GAM's Strategic Objectives

National Objectives from the Indicative Executive Programme 2021-2024

- Create an investment environment capable of captivating capital and encouraging local investments
- Improve the level of services provided to citizens and ensure equal distribution

Strategic Areas

- Urban planning and investment
- Environment and health

Strategic Objectives

- Organizing a city that achieves urban sustainable development while preserving the characteristic of the city
- Sustainability of gardens, parks and public spaces

Annex 4. Phases of VLR Preparation



Table 11. Phases of the VLR Report Preparation

	Phase 1 Data collection	Phase 2 SDG Working Paper development	Phase 3 SDG Working Paper review
Step 1	Mapping of data sources by the VLR project team with the support of Amman Urban Observatory.	Selection of SDG targets; analysis of the primary data collected; subsequent desk research. Additional individual data and input requests to the stakeholders.	Integration of the stakeholders' review comments and inputs and preparation of draft report. Gender check of the draft report provided by the UN Women to ensure adequate inclusion of gender throughout the document.
Step 2	Mapping of stakeholders and data providers in public, private, civil society, academia, and international organizations in relation to each SDG selected.	Development of Working Papers to present analysis of the performance on SDGs in Amman, based on the data collected and research findings gathered.	Revision of the draft report, ensuring editorial coherence and consistency. Additional rounds of interviews with VLR project stakeholders.

Bibliography

Step 3	<ul style="list-style-type: none">• Questionnaire zero disseminated among selected stakeholders to establish the level of awareness and engagement with the 2030 Agenda in Amman.• Working Papers reviewed via stakeholder offline/online consultations.• First meeting held, aiming to introduce the stakeholders to the SDG Working Paper methodology and discuss the advancements of SDG targets and indicators, and specific challenges and policy responses. The second meeting was held in person and was dedicated to the discussion of the Working Papers disseminated among the stakeholders.• VLR to VNR alignment check by the VLR project team to identify complementarities and strengthen the consistency of both reports in areas such as data, findings, and policy frameworks.	<ul style="list-style-type: none">• Editing and layout design of the final report.
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Annex 5. Stakeholder Participation



Stakeholders who participated in the VLR consultations and attended at least one workshop between January and April 2022.

Table 12. Stakeholder Participation: Stakeholder Consultation Workshops

Public Sector: National Level		Name
1	Ministry of Local Administration (MoLA)	Lina Ateyat
2	Ministry of Local Administration (MoLA)	Eman Amawi
3	Ministry of Local Administration (MoLA)	Rodaina Shwareb
4	Ministry of Planning and International Cooperation (MoPIC)	Rasha Dabouri
5	Ministry of Planning and International Cooperation (MoPIC)	Lamia Al-Zoubi
6	Ministry of Environment	Sara Alhaleeq
7	Department of Statistics (DoS)	Mohammad Ayasrah
8	Department of Statistics (DoS)	Ahlam Al Roussan
9	Jordan National Commission for Women	Salma Nims
10	Jordan National Commission for Women	Diana Hadadeen
11	Ministry of Health	Lubna Althaher
12	Ministry of Health	Huda Ababneh
13	Ministry of Health	Rwaida Farajat
14	Ministry of Social Development	Saleh Yousef
15	Ministry of Investment	Khaled Al Momani
16	Ministry of Tourism and Antiquities	Nadia Al Qudah
17	Ministry of Tourism and Antiquities	Ahed Alnees
18	Department of Land and Survey	Mohammad Sawafeen
19	Department of Land and Survey	Majida Hababbeh
20	Ministry of Agriculture	Aida Al Masri
21	Ministry of Energy - Jordan Renewable Energy and Energy Efficiency Fund (JREEF)	Lina Mubaydeen
22	Ministry of Energy - Jordan Renewable Energy and Energy Efficiency Fund (JREEF)	Karam Ajarmeh
23	Ministry of Energy - Jordan Renewable Energy and Energy Efficiency Fund (JREEF) Consultant	Ahmad Bassam
24	Jordan Civil Aviation Regulatory Commission	Mohammad Al-Khurshan
25	Land Transport Regulatory Commission	Ghhadeer Maitah
26	Ministry of Industry and Trade	Fatema Shneekat
27	Ministry of Education	Faiza Abu Dari

Bibliography

	UN Organizations	Name
1	UN Resident Coordinator Office in Jordan	Christina Meinecke-Chaley
2	UNDP	Rana Saleh
3	UNDP	Dana Lweisy
4	UNDP	Kana Kudo
5	UNDP	Nedal AlOran
6	UNIDO	Thamer Al Shoshan
7	UNIDO	Sulafa Mdanat
8	UNIDO	Maya Zeidan
9	UNHCR	Bernard Ifeanyi
10	UNHCR	Suhair Thyabat
11	UNHCR	Leena Younes
12	UNHCR	Sara Granlund
13	UN Women	Catarina Botto
14	UN Women	Bushra Abu Shahout
15	WHO	Noverta Ansari
16	UNAIDS	Elie Ballan

	International Organizations	Name
1	GIZ	Rawan Ottour
2	Friedrich Ebert Foundation (FES)	Dina Kisby

	Academia and Think Tanks	Name
1	WANA Institute	Shireen Shaheen
2	WANA Institute	Reem Al Hadadeen
3	University of Jordan	Dr. Ashraf A. Bany Mohammed
4	University of Jordan	Dr. Diala Tarwneh
5	University of Jordan Innovation and Entrepreneurship Center	Leena Alhyari
6	Jordan Strategy Forum	Nisreen Barakat

Civil Society and Private Sector		Name
1	Ruwwad	Samar Dudin
2	Jordan Engineering Association	Fawzi Masad
3	Jordan Engineering Association	Samah Fasafsis
4	Jordan Green Building Council	Ghydaa Salameh
5	Maan Nasel	Hazem Zureiqat
6	Amman Chamber of Commerce	Hisham Dwaik
7	Private Consultant/Expert	Nashwa Souboh
8	Private Consultant/Expert	Basema Soub
9	Private Consultant/Expert	Iyad Al Halis

Public Sector: Local Level		Name
1	Greater Amman Municipality (GAM)	Akram Khraisat
2	Greater Amman Municipality (GAM)	Naser Qandeel
3	Greater Amman Municipality (GAM)	Ilham Nawawi
4	Greater Amman Municipality (GAM)	Nisreen Daoud
5	Greater Amman Municipality (GAM)	Haleema Omoush
6	Greater Amman Municipality (GAM)	Randa Wazzan
7	Greater Amman Municipality (GAM)	Basem Hawamdeh
8	Greater Amman Municipality (GAM)	Njoud AbdelJawad
9	Greater Amman Municipality (GAM)	Rand Nsour
10	Greater Amman Municipality (GAM)	Riham Batayneh
11	Greater Amman Municipality (GAM)	Iman Haddadin
12	Greater Amman Municipality (GAM)	Nour Khateeb
13	Greater Amman Municipality (GAM)	Rawan Mtaireen
14	Greater Amman Municipality (GAM)	Rania Awaida
15	Greater Amman Municipality (GAM)	Amani Hmoud
16	Greater Amman Municipality (GAM)	Nemeh Jazazi
17	Greater Amman Municipality (GAM)	Maram Hijazeen
18	Greater Amman Municipality (GAM)	Maha Alwarikat
19	Greater Amman Municipality (GAM)	Abeer Dabbas
20	Greater Amman Municipality (GAM)	Rama Elazza
21	Greater Amman Municipality (GAM)	Ibrahim AlHadid

Bibliography

	Project Team Members	Name
1	UN-Habitat	Deema Abu Thiab
2	UN-Habitat	Alia Asad
3	UNESCWA	Sukaina Al-Nasrawi
4	UNESCWA	Jenna Helal
5	UNESCWA	Adnan Hassoun
6	UNESCWA	Anna Koledova
7	UNESCWA	Nisreen Alalraj
8	UN-Habitat	Aya Hammad
9	UN-Habitat ROAS	Nagwa Lachine
11	UN-Habitat	Luis Herrera-Favela
12	UN-Habitat	Gina Marie Enriquez
13	UCLG-MEWA	Salim Korkmaz

Annex 6. Stakeholders Interviewed



Table 13. Stakeholders Interviewed

Name	Organization
Nisreen AlAraj	UNESCWA
Deema Abuthiab	UN-Habitat
Aya Hammad	
Christina Meinecke	UN Resident Coordinator Office
Hussam Kayyali	
Anastasiia Galina	
Akram Khraisat	GAM VLR Committee
Njoud Abdel Jawwad	
Nisreen Daoud	
Naser Qandeel	
Amani Hmoud	
Nour Alkhateeb	
Reham Batayneh	
Basem Hawamdeh	
Ilham Al Nawawi	
Nemeh Jazazi	
Iman Haddadin	
Ahmad Malkawi	City Manager/GAM
Rama Al Azeh	Deputy City Manager/GAM
Ann Khraisat	GAM/Strategic planning dept.
Rula Khashman	GAM
Alaa Beeno	Amman Vision Company
Mohammad Omoush	GAM/Financial Department
Lamia Alzoubi	Ministry of Planning and International Cooperation
Rasha Dabouri	

Annex 7. Mapping of the Achievements of GAM's Strategic Objectives



Table 14. GAM Mapping on Achievements of Strategic Plan 2018-2022. Source: GAM

Strategic objective	2018	2019	2020	2021
Electronic transformation of GAM operations	70.3%	91.1%	59.3%	84.66%
Infrastructure development for information technology systems	67.1%	81.3%	100%	71.59%
Improving, maintaining and developing communication and partnership with stakeholders	100%	100%	100%	100%
Providing a supportive institutional environment for development and improvement to raise the quality of services	84.4%	84.4%	72%	81.5%
Upgrading the level of financial management to best practices in the public sector	85.6%	88%	83.7%	92.06%
Raising the efficiency of fixed assets and the supply chain	52%	-	-	-
An efficient and safe road and transport network according to best practices	77.8%	76%	90%	64.2%
Rehabilitation, development and readiness of the assets and properties of the Greater Amman Municipality	96.7%	91%	84.3%	68.84%
Raising the level of traffic safety	89.5%	87.3%	79.8%	73.78%
Developing and raising the efficiency of public transport services	69%	69%	74.3%	78.84%
Ensure a healthy, safe and sustainable environment	96.9%	88%	71.8%	34.76%
Applying the requirements of Amman healthy city	93.9%	100%	100%	47.51%
Creating and maintaining gardens, parks and spaces	90.8%	82.6%	76.7%	77.67%
Increasing the percentage of green spaces	75.5%	100%	-	75.13%
Planning and organizing a city that achieves sustainable development while preserving the unique identity of the city	90.2%	94%	97.9%	100%
Directing and attracting investment to the city of Amman	98.9%	98%	-	-
Empowering community members and enhancing a sense of social responsibility and good citizenship by providing inclusive quality programmes	100%	94%	69%	79.8%
Preserving the cultural heritage and the originality of the city, so that Amman will be attractive for urban tourism	100%	100%	100%	100%

Annex 8. GAM Projects Postponed due to COVID-19 Pandemic



Table 15. GAM Projects and Initiatives Postponed due to the COVID-19 Pandemic. Source: GAM

Rehabilitation of Tia'Al-Ali emergency building/second floor/traffic control

Completion of a comprehensive traffic study for Al-Munawarah Street (University Bridge Intersection / Al-Waha Roundabout/Kilo Roundabout Suhaib Extension and ending with Zahran Street

Preparations of designs and tender documents for pedestrian bridges/intersection of the Sports City, number 3

Completion of maintenance of tunnels and bridges in different locations

Completion of the historical corridor/Al-Hussein Parks

Completion of design and construction of public facilities and security and protection rooms in 4 parks (Al-Huda, Deir Ghbar, Al-Mamounia, Al-Juwaida)

Completing the preparation of designs and tender documents, and implementation of the rehabilitation of the Queen Noor Forest

Completing the preparation of design and tender documents, and implementing the rehabilitation of gardens in different locations

Bus Rapid Transit Infrastructure implementation

Organizing recreational and educational activities for people with different disabilities from GAM and the local community

Automating of the property estimation processes

An initiative to implement 5 festivals and celebrations in Zaha cultural centres on the occasion of Jordan's centennial celebrations

The initiative to launch the first electronic newspaper created by children, and print 100 copies to distribute

An initiative to adopt 5 children with autism and people with special needs and teach them the craft of making pottery throughout the year and consider the results and outputs of their production line

King Abdullah II parks/Al-Muqablain completion of packages 4 and 5

Annex 9. Projects Related to SDGs Implemented by International Agencies, National Government and GAM



Table 16. Projects Related to SDGs Implemented by International Agencies, National Government and Local Government (GAM)

Funding Agency	Project	Summary
World Bank	Amman Climate Action Plan 2050	In 2019 GAM launched the preparation of the Amman Climate Action Plan 2050. The plan focuses on the decarbonization of Amman's economy and the city's resilience against climate change, through for instance reducing private cars usage and encouraging healthy lifestyle, improving road safety, developing green infrastructure and public spaces. The plan includes a strategy for financing the projects and initiatives and guides the municipality in exploring the innovative options for financing low carbon development projects. ²⁵¹

251 The Amman Climate Action Plan (a vision for 2050 Amman), 2019 Greater Amman Municipality

Funding Agency	Project	Summary
European Bank for Reconstruction And Development (EBRD)	GAM Solid Waste Crisis Response Programme	The project, which started in 2016 and is still ongoing, aims to provide immediate support to GAM's municipal solid waste system (which is strained due to the Syrian crisis) and to financing more sustainable and long-term solutions. Tranche I, consisting of JOD 40 million, has an objective to refinance GAM's existing debt, and is co-financed by a GBP 5 million investment grant for urgently needed solid waste investments. Tranche II, consisting of up to EUR 50 million loan from EBRD, is co-financed by capex grants of up to 50 per cent provided by international donor(s). The project is still ongoing and includes the construction of a fifth cell of Al-Ghabawi Landfill and its associated leachate lagoons, the purchases of 75 compactors and other equipment, the capping of cell 4 wells, drilling and installation of the Landfill Gas Recovery ("LFG") collection system, and connecting it to the existing LFG system, the upgrade and rehabilitation of Al-Shaer waste transfer station and the purchase of 25 sweeper vehicles for use in solid waste operations in Amman. As a part of the project EBRD provided GAM 13 million USD sovereign-guaranteed loan in 2015 to finance the construction of a landfill gas recovery system at the Al-Ghabawi landfill site. ²⁵²
European Bank for Reconstruction And Development (EBRD)	Biogas Extraction Project at Ghabawi Landfill	The project aims to enable the extraction of the methane gas from cells of Ghabawi landfill, to produce electric power, and meet an electricity production capacity of 4.8 MWH. The project further involves designing and building a biogas system for cell no. 4 of the landfill, and linking it to the current operating system. The project started operation in May 2019 and the estimated monthly financial value of the electricity produced is JD 400,000-500,000, and it covers 40-45% of the value of GAM's electricity bill. This project is expected to generate job opportunities in the field of renewable energy.

252 <https://www.ebrd.com/work-with-us/projects/psd/gam-solid-waste-crisis-response-programme.html>

Bibliography

Funding Agency	Project	Summary
Jordan Enterprise Development Corporation, Jordan Exports, Bridge for Billions, SeedStars, ChangeLabs, and The Business and Professional Women Association - Amman	LevelUP	LevelUP accelerator program, ran between 2021-2022, offers the access to: (i) e-training modules delivered by leading European Business Schools in synergy with academia and vocational training centers in Jordan; (ii) scale-up programs with tailor-made solutions, e-coaching modules, and mentorship delivered in collaboration with corporations, financial ventures, and innovation hubs; (iii) the “Seed to grow” program which includes networking events, boot camps, and award ceremony; (iv) the “Go global” programme in partnership agreement with e-commerce players and promotional events with potential traders and buyers in the target countries. ²⁵³
European Bank for Reconstruction And Development (EBRD)	Amman Electric Bus Project	The project, which was launched in 2020, aims to improve public transport in Amman and is expected to contribute to the transition into low-carbon transport infrastructure. The project follows-up the investment made to deliver the Amman’s Green City Action Plan, and is a part of an action plan to enlarge the bus fleet in the city. ²⁵⁴
Rockefeller Foundation, GAM	Amman’s Resilience Strategy	Published in 2017, the strategy is dedicated to address major urban challenges in Amman exacerbated by the refugee influx and the impact of climate change. The strategy includes an action plan composed of five pillars, focusing on the city becoming (i) integrated and smart; (ii) environmentally proactive; (iii) innovative and prosperous; (iv) young and equal, and (v) united and proud. This strategy connects refugee response efforts with the city’s long-term actions to deliver job opportunities and to enhance access to municipal social centers for refugees. ²⁵⁵

253 LevelUP Accelerator Brochure

254 <https://www.ebrd.com/work-with-us/projects/psd/52505.html>

255 Amman Resilience Strategy (2017)

Funding Agency	Project	Summary
Bloomberg Philanthropies	Amman is listening	The project aims to develop an online participatory platform with interactive maps to respond to the residents' needs during a crisis and to strengthen urban resilience. ²⁵⁶ This project was awarded one million dollars in addition to the technical support and coaching over three years (2022-2025).
European Bank for Reconstruction and Development (EBRD)	Amman Green City Action Plan	The project, launched in 2019, aims to support GAM in improving its sustainability performance by implementing the Green Cities Action Plan (GCAP) methodology. The methodology allows identifying priority investment areas in the city, and developing a comprehensive and systematic city-wide strategy that addresses a range of environmental issues and highlights the links with economic and social dimensions of development. The plan concluded in June 2021. ²⁵⁷
United States Trade and Development Agency (USTDA)	Amman Smart City Roadmap	The project commenced in 2018 and aims to provide technical assistance to develop a comprehensive ten-year Smart City Roadmap to enhance city operations, public services and the quality of life by harnessing innovations in Information and Communication Technologies (ICTs). It will also support the implementation of the Traffic Monitoring Platform to reduce traffic in Amman. 900,000 USD was granted for this project. ²⁵⁸

²⁵⁶ GAM's 'Amman is Listening' project wins Global Mayors Challenge, Jordan Times (2022). Accessed on May 21st, 2022

²⁵⁷ AECOM Limited (2021) Amman Green City Action Plan. Accessed on May 27th, 2022

²⁵⁸ USTDA Press Release (2018) USTDA and Greater Amman Municipality Partner to Advance 'Smart Cities' in Jordan and Connect US Companies to New Opportunities. Accessed on May 27th, 2022

Bibliography

Funding Agency	Project	Summary
UN-HABITAT, International Center for Migration Policy Development, and the UCLG	Mediterranean City to City Migration (MC2CM)	The project ran between 2015 - 2018 and focused on improving the management of migration challenges in Amman through peer-to-peer learning and the exchange of knowledge and experiences among ten participating cities from the Mediterranean region. One main outcome of this project was the development of the Amman City profile with regard to migration. The profile also includes recommendations on how to meet the migration challenges and ensure equal access to services for all. Currently, GAM is proceeding to implement these recommendations together with its partners and with the support of international organizations. ²⁵⁹
European Investment Bank (EIB)	Advisory services for the Al Mahattah multimodal transport hub	A technical assistance project launched in 2020 with an aim to provide advisory services for the Al Mahattah multimodal bus transport hub in Amman. The advisory services are financed through a grant under the Bank's Economic Resilience Initiative (ERI), which supports the preparation of projects that improve the resilience of the EU neighbouring countries ²⁶⁰ .
Canadian International Assistance in Jordan	Women's Economic Linkages and Employment Development (Salt, Irbid, and East-Amman)	This project ran from 2017 through to 2021 was dedicated to removing the barriers to women's access to the labour market in Salt, Irbid, and in the East-Amman. It seeks to provide skills-based development in the private health sector, find solutions to child care challenges and identify safe and affordable transportation to and from work. The budget of the project was \$6,600,425 CAD. ²⁶¹

259 International Centre for Migration Policy Development (2022) MC2CM - ICMPD Accessed: May 27th, 2022

260 <https://www.eib.org/en/press/all/2020-155-eib-supports-the-advisory-services-for-the-al-mahattah-multimodal-transport-hub-in-jordan>

261 Government of Canada (2020) Project profile - Women's Economic Linkages and Employment Development - Canada.ca. Accessed: February 20th, 2022

Funding Agency	Project	Summary
GEF and UNDP	SURE	The Sustainable Urbanization and Resource Efficiency (SURE), which started in 2018 and is still ongoing, is a project implemented by Greater Amman Municipality (GAM) and UNDP and funded by the Global Environment Facility (GEF). It aims to establish a systematic approach for GAM to implement benchmarked, standardized tools and methodologies for measuring and reporting on the progress towards a climate-resilient, resource-efficient city. ²⁶² The project's primary objective is to enforce energy efficiency standards, tools and solutions improving the quality of life and complying with the National Energy Efficiency Action Plan (NEEAP).
Japanese Government and UN-Habitat	Flash Flood Resilience	Japan granted UN-Habitat \$978,709 to strengthen Amman's resilience against flash floods. According to the flood hazard map of Jordan, prepared in June 2019, Amman is vulnerable to flash floods and epidemics. High concentration of population and influx of refugees exacerbates the pressure on urban infrastructure and services in the city, especially the water and sanitation infrastructure addressed within this project. The Project started in march 2020. ²⁶³
German Federal Ministry for Economic Cooperation and Development (BMZ)	Improving Living Conditions of Disadvantaged Areas in Amman	The Ministry of Environment (MoEnv), BMZ and GAM are partners since 2017 in the project aiming to develop green infrastructure in Amman, improving the quality of life by facilitating access to local public transport, increasing walkability and preserving biodiversity. ²⁶⁴

262 Direct reporting from UNDP

263 UN-Habitat (2020) Japan supports urban crisis prevention and strengthening climate change action in Jordan | UN-Habitat. Accessed May 27th, 2022

264 GIZ (2020) Improving green infrastructure in Amman. Accessed May 27th, 2022

Bibliography

Funding Agency	Project	Summary
Agence Française de Développement	Study on Urban Inequalities and Refugees	This research project analyzes trends in social inequalities between 2010 and 2016 in the two main Jordanian cities hosting Syrian refugees. There are 194,000 Syrians in Amman and 140,000 in Irbid, according to 2018 data of the United Nations Refugee Agency (UNHCR). It involves studying the impact of the influx of Syrians on trends in economic inequalities (incomes, growth, poverty, etc.) and on the housing market (real estate market, the share of housing in household expenditures, etc.). ²⁶⁵
Agence Française de Développement	Supporting employment for 2,000 Jordanians and Syrian refugees	This project, which ran between 2018-2020, aims to help 2,000 Jordanians and Syrian refugees find employment. The current budget for this is 3 million euros. ²⁶⁶ The project is taking place across cities in Jordan: Zarqa, Irbid, Amman, Ajloun, and Jerash.
Agence Française de Développement	Healthcare and access to education	This project aims to improve access and availability of healthcare infrastructure and services and the access to education. This project commenced in 2017, and is still ongoing. ²⁶⁷
Switzerland Federal Council	Sanitation Solutions for Underserved Communities in Jordan	This project aims to improve sanitation services, especially to install sanitation solutions in Azraq town and in East Amman. The timeline of the project is 2017 to 2022. Its current budget is 4,980,000 CHF (Swiss Francs). ²⁶⁸

265 AFD (2020) Urban inequalities within Jordan cities hosting refugees - Amman, Irbid. Accessed February 20th, 2020

266 AFD (2018) TANMYEH: Access to Vocational Training, Employment and Development. Accessed February 20th, 2022

267 AFD (2017) Access to Healthcare, Education and Psychosocial Care in Jordan and Lebanon (Phase 2). Accessed February 20th, 2022

268 Switzerland in Jordan (2021) Sanitation Solutions for Underserved Communities in Jordan. Accessed February 20th, 2022

Funding Agency	Project	Summary
Canadian International Assistance in Jordan	Improved learning environment for children (in Irbid, Zarqa, & Amman)	The objective of this project run between 2015 and 2020 was to provide a safe and healthy learning environment for 42,352 Jordanian and Syrian refugees, girls and boys, attending public schools, and 265 education staff in Amman, Irbid, and Zarqa governorates. ²⁶⁹ The budget was \$6,026,166.33 CAD.
Canadian International Assistance in Jordan	Enhancing child protection, education and economic resilience (Irbid, Mafraq, Amman and Zarqa)	This project aimed to improve the resilience and well-being of Syrian refugees and host communities in four governorates: Irbid, Mafraq, Amman, and Zarqa. The plan was to improve the education outcomes of school kids, to strengthen child protection and enhance the economic resilience of refugee and host community families. This included: (1) increasing teachers' knowledge of child-friendly methodologies and child rights; (2) increasing access to safe opportunities within communities for gender-responsive development and psychosocial support for girls and boys; and (3) increasing household savings (on energy and water) through adoption on renewable energy and resources. The budget of the project was \$11,761,451 CAD. ²⁷⁰

269 Government of Canada (2020) Project profile – Improved Learning Environment for Children. Accessed May 27th, 2022

270 Project profile - Enhancing Child Protection, Education and Economic Resilience in Jordan - Canada.ca. Accessed February 20th, 2020

Bibliography

Funding Agency	Project	Summary
Governments of Canada, France, Japan, Kuwait, the Netherlands, the United Kingdom, and the United States; as well as the Islamic Development Bank and USAID.	Queen Alia International Airport in Amman (QAIA)	QAIA is located outside the borders of the municipality, however, delivered through a successful Public-Private Partnership. The project has considerable influence on the development of Amman and Jordan. The investment was agreed upon in 2007, with the value of \$670M USD, including \$120M USD from the International Finance Corporation (IFC) and \$160M USD provided by commercial banks supported by IFC. QAIA project focused on making the airport eco-friendly ²⁷¹ and received the ACI Asia-Pacific Green Airports recognition by the Airport Council International (ACI). ²⁷²

271 Queen Alia International Airport - Environment, Health & Safety

272 Times Aerospace (2022) "Queen Alia International receives ACI Asia-Pacific Green Airports recognition"



SUSTAINABLE
DEVELOPMENT
GOALS







Greater
Amman
Municipality

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