

CLIMATE CHANGE RISKS

Like other cities around the globe, Amman is already experiencing the impacts of a changing climate. The country is facing irregular patterns of rainfall swinging between the extremes of drought to excessive rain over a short period of time, rising temperatures in summer and declining temperatures in winter, and a significant increase in extreme weather events. Heavy rain events are leading to flooding in lower-lying areas of the city, hazardous blizzards have closed schools, and heat waves and water shortages have directly impacted the health of the population and operation of businesses. These adverse impacts of climate change disproportionately affect the poor and most vulnerable in Amman.

The Amman city administration is now acting to protect the most vulnerable, as well as improve the resilience of the city and its inhabitants. Amman's Resilience Strategy was published in 2017. It identifies a range of actions that will help city residents survive and adapt to climate shocks and grow stronger. It sets a vision for Amman and establishes specific resilience goals and actions that will help the city achieve this vision.

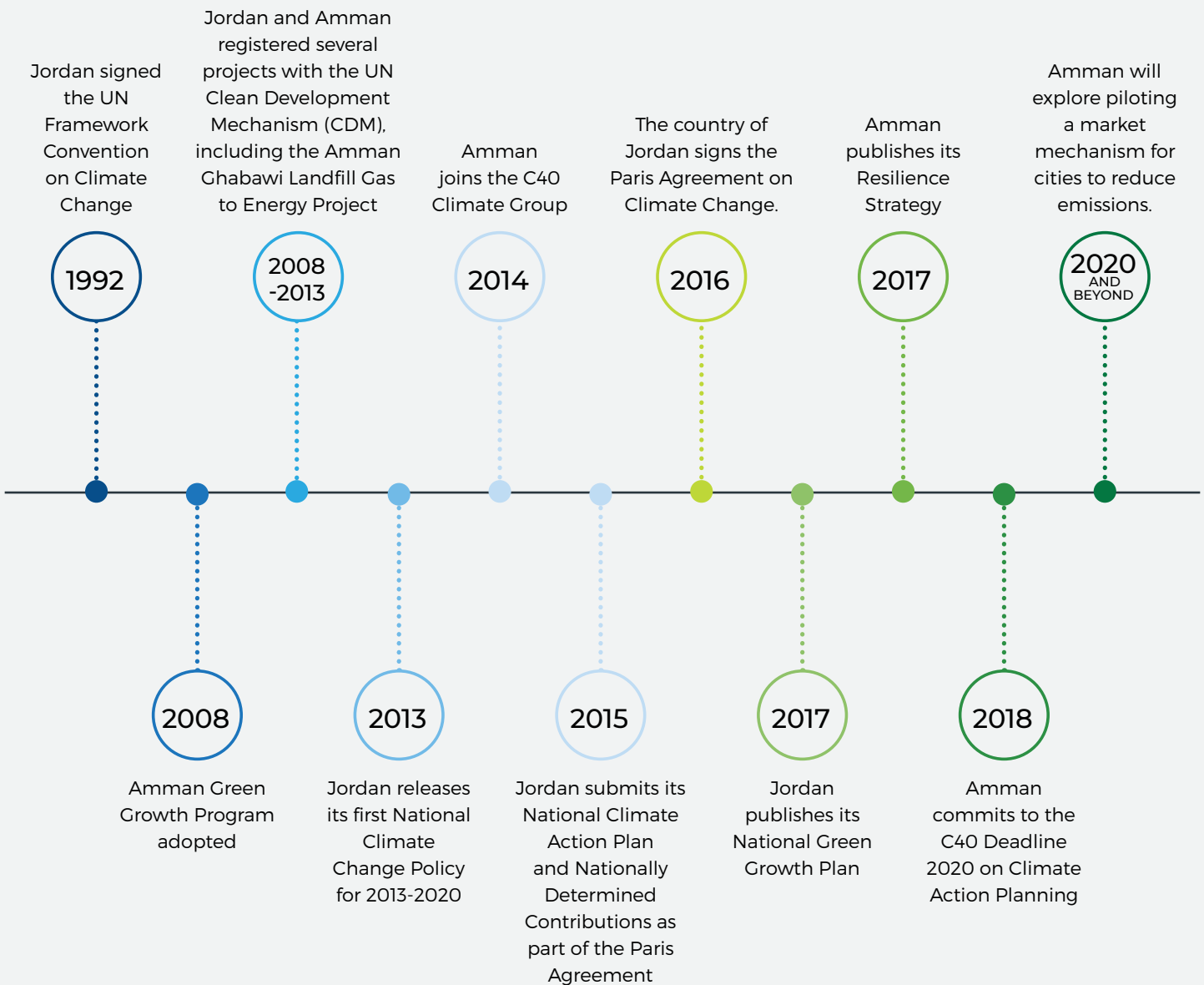
The Amman Climate Action Plan is an accompanying document to the Resilience Strategy. In the Resilience Strategy, the creation of a Climate Action Plan to mitigate emissions is cited as one action within the environmentally proactive city pillar. The actions within this Plan have been aligned closely with the Amman Resilience Strategy in the areas that overlap. However, the full Resilience Strategy should be referenced to better understand the complete vision of how the city is addressing climate change. Taken together, these two documents chart a path forward for Amman toward a more prosperous, resilient and low-carbon future. With this commitment the city is resolving to prevent the worst climate impacts for its inhabitants, thereby building a more sustainable and resilient future for Amman and the country.



REGIONAL LEADERS ON CLIMATE ACTION




The Hashemite Kingdom of Jordan and the city of Amman have long been committed to action on climate change. Amman's contribution to global climate change is minor. However, as a

rapidly developing city in a strategically important region, it aspires to be a leader in showcasing the opportunities that low-carbon, resilient development provides to its inhabitants.



AMMAN PLAN BENEFITS

Many of the actions identified in the Amman Plan and Resilience Strategy benefit the community, the economy and the environment in a multitude of ways.

 Environmental Benefits	 Social/Health Benefits	 Economic Benefits
Reduced air, land and water pollution	Protection against natural disasters (e.g. flooding, storms, heat waves)	Increased jobs
Clean water	Improved health outcomes through reduced air pollution	Enhanced and expanded urban services (e.g. public transportation)
Increased water supply	Better quality housing	Reduced utility bills
Protection of biodiversity for animals and plants	Improved equitable access to urban services	Reduced operating costs
Increased green space	Enhanced public open space and green space	Energy security
Reduced heat island effect	Increased community participation	Neighborhood revitalization

DISCLAIMER ON DATA AND MODELING

The 2014 emission data contained in this report was collected in 2015 and 2016, and was the best available data at that time. The city of Amman used The Global Protocol for Cities, which allows cities to choose to report at a basic level or basic plus level. The basic level inventory does not include industrial processes and agriculture data. Amman does have light industry and limited agriculture activities within the boundaries drawn for the emission inventory. However, those activities were not measured in the 2014 inventory and their emissions have not been considered in the Amman Climate Action Plan to date. The GAM endeavors

to measure and manage these emissions in future emission inventories and will update actions to address these emissions in future Plan updates.

Estimating amounts of greenhouse gases is inherently inexact. As such, the amounts identified in this plan are meant to be directional, identifying trends in sector emissions and future projections. They are not exact amounts and are likely to change as Amman collects additional data on city emissions. Amman also endeavors to further expand data sources in future iterations of its inventory, continually improving its understanding of emission sources in the city.

AMMAN CITY DATA

POPULATION IN BOUNDARY OF GREATER AMMAN MUNICIPALITY:

POPULATION 2017

3,698,362

GDP

\$15 BILLION USD⁴



As of 2017, the population was 3,698,362 (Jordan Department of Statistics 2017). Population growth is expected to increase in Amman at a rate of about 1.8 percent per year until 2030. In recent years, the population has grown at a significantly higher rate due to the humanitarian crisis in Syria. The country has accepted over 1 million refugees from Syria alone, and many more Palestinians and Iraqis reside in the Hashemite Kingdom of Jordan as a result of regional conflicts in the last two decades. Non-Jordanians represent one-third of the population. Amman has a predominately young population, with those aged 24 years old and younger representing the city's largest group and greatest asset.

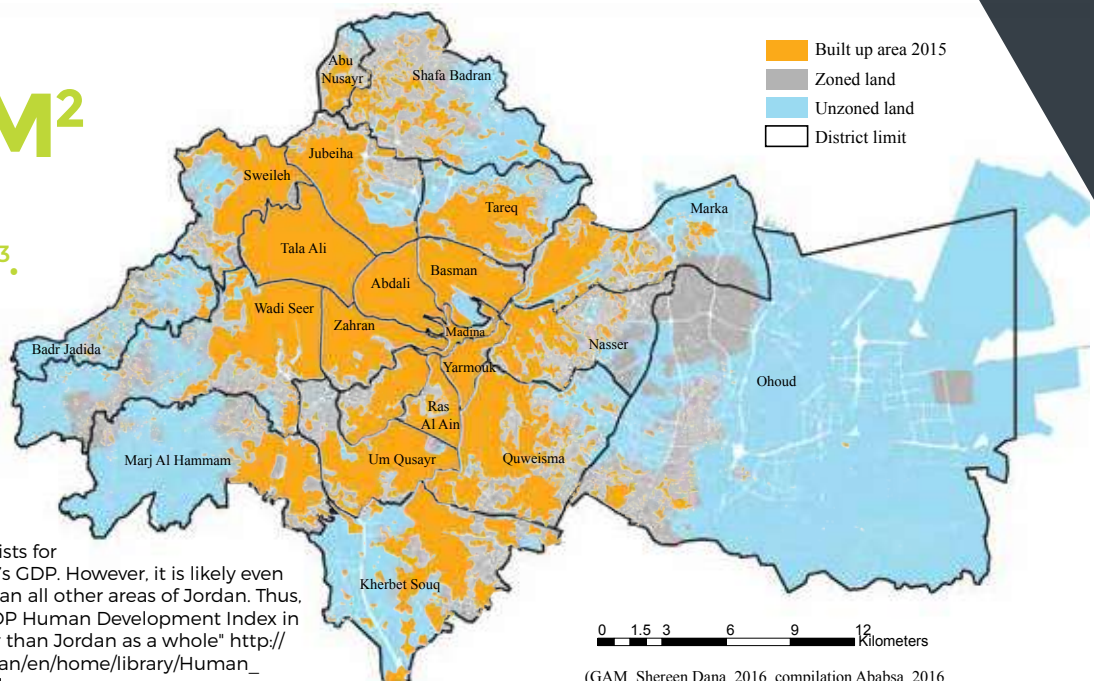
AREA

800 KM²

built-up area
212 km² in 2015³.

³ World Bank 2018, *Urban Growth Model and Sustainable Urban Expansion for the Hashemite Kingdom of Jordan*. 154 p.

⁴ This figure is scaled from national GDP data. No data exists for Amman's share of the country's GDP. However, it is likely even higher on a per capita basis than all other areas of Jordan. Thus, this estimate may be low. UNDP Human Development Index in 2011 put Amman's GDP higher than Jordan as a whole" http://www.jo.undp.org/content/jordan/en/home/library/Human_Development/NHDR/2011.html



(GAM, Shereen Dana, 2016, compilation Ababsa, 2016)

CLIMATE

The climate in Amman is sub-tropical arid, and the city experiences hot dry summers and cold, wet winters. Amman has a varied topography and diverse climate, with extreme micro-climates in the city. The rainy season is in January and February when almost all of the rain for the year falls. The city is considered dry, with around 250 millimeters (mm) of rain a year.

HISTORICAL CHANGES AND FUTURE PROJECTIONS INCLUDE THE FOLLOWING (WORLD BANK 2019):

- ▶ The country's annual maximum temperature has increased by 0.3-1.8 degrees Celsius since the 1960s.
- ▶ In most parts of the country, precipitation has decreased over the last several decades. However, there is high variability across the country with some areas recording increased precipitation.
- ▶ More frequent heat waves are projected, with an expected temperature increase of 2 °Celsius by the year 2050.
- ▶ Intense precipitation is projected to increase, although overall rainfall will decrease with some level of variability.

KEY SOCIAL, ECONOMIC AND ENVIRONMENTAL DATA IN AMMAN INCLUDE THE FOLLOWING (100 RESILIENT CITIES 2017):

30% increase in youth unemployment (2011 to 2015)

40% increase in demand for water (from 2011 to 2015)

15% unemployment rate, highest among women and youth

25% of annual government revenues impacted by migrant influx

ADMINISTRATION

Amman is divided administratively into 22 districts, each with a high level of autonomy to deliver city services. The Greater Amman Municipality (GAM) maintains central control with regard to zoning and planning, as well as infrastructure design and construction. The GAM is financially independent, with a large percentage of its revenues self-generated from fees and fines. It also has a long track record of direct engagement with international development institutions for the development of city infrastructure.