

FORECASTING SUSTAINABLE URBANIZATION:  
SUPPORT FOR SUSTAINABLE INFRASTRUCTURE PLANNING IN CITIES

Urbanization and  
resource trends  
in Tajikistan



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Dushanbe



Tajikistan



North and Central Asia subregion



Asia-Pacific region

Throughout this report colours are consistently used to represent city-level data from Dushanbe (blue), national-level data from Tajikistan (orange), subregional averages from the ESCAP North and Central Asia subregion<sup>1</sup> (grey), and regional averages from the entire ESCAP Asia-Pacific region<sup>2</sup> (yellow).

Further resources and information about the Inception and data collection workshop held in Dushanbe, Tajikistan on 17-18 February 2020 can be found at:

<https://www.unescap.org/events/forecasting-sustainable-urbanization-inception-and-data-collection-workshop-dushanbe>.

For any questions or additional information, please kindly contact the Forecasting Sustainable Urbanization team at [escap-edd-suds@un.org](mailto:escap-edd-suds@un.org).

The map on the front cover was created using Grafomap.

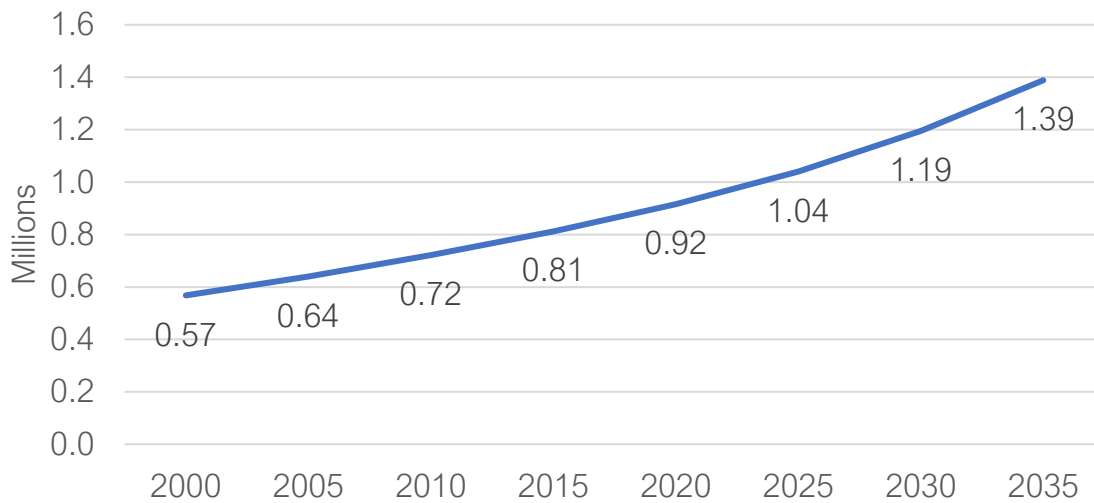
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<sup>1</sup> Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan, and Uzbekistan.

<sup>2</sup> The full list of ESCAP's 53 Member States can be found here: <https://www.unescap.org/about/member-states>.

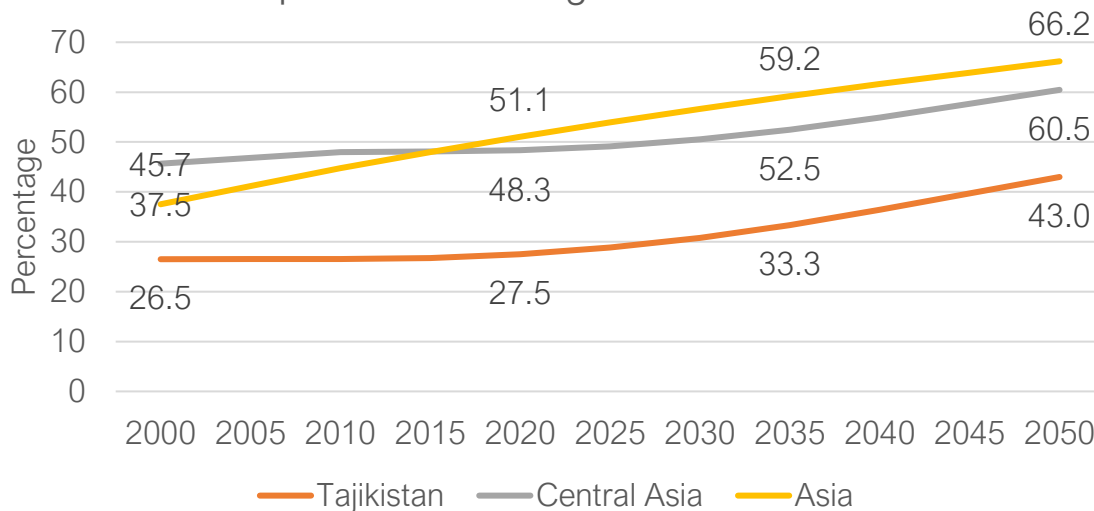
# Urbanization

## Population of Dushanbe



Source: United Nations, Department of Economic and Social Affairs, Population Division (2018).

## Population Residing in Urban Areas



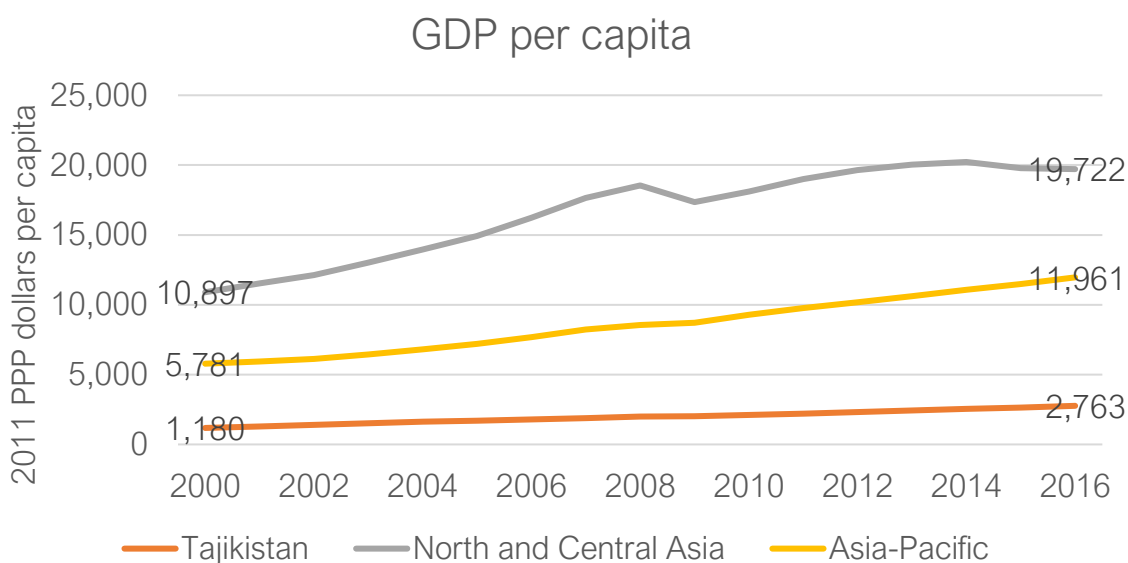
Source: United Nations, Department of Economic and Social Affairs, Population Division (2018).

Since 2000 Dushanbe has grown by approximately 350,000 people and the city is projected to add almost half a million more people over the next 15 years. Whilst the the proportion of the population residing in urban areas in Tajikistan has remained broadly constant over the last 20 years, the country is forecasted to undergo a period of rapid urbanization, with the proportion of the population residing in urban areas increasing from 27.5 per cent today to 43 per cent by 2050. This would still be significantly below subregional and regional averages; both the North and Central Asia subregion and the Asia-Pacific region as a whole are already approximately 50 per cent urban now, and are projected to be over 60 per cent urban by 2050.

## Economic growth



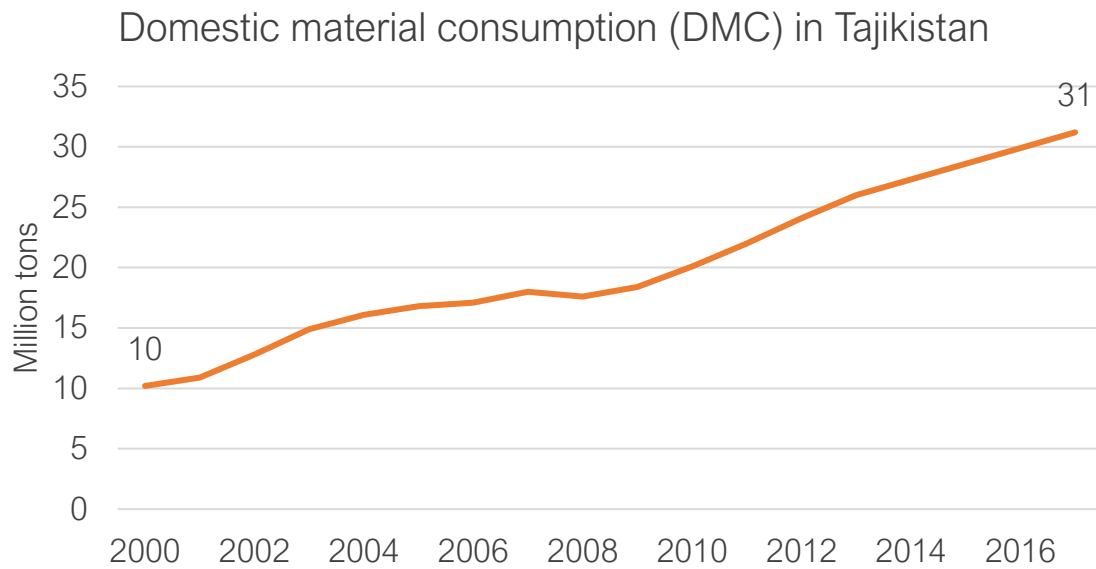
Source: ESCAP Statistical Online Database.



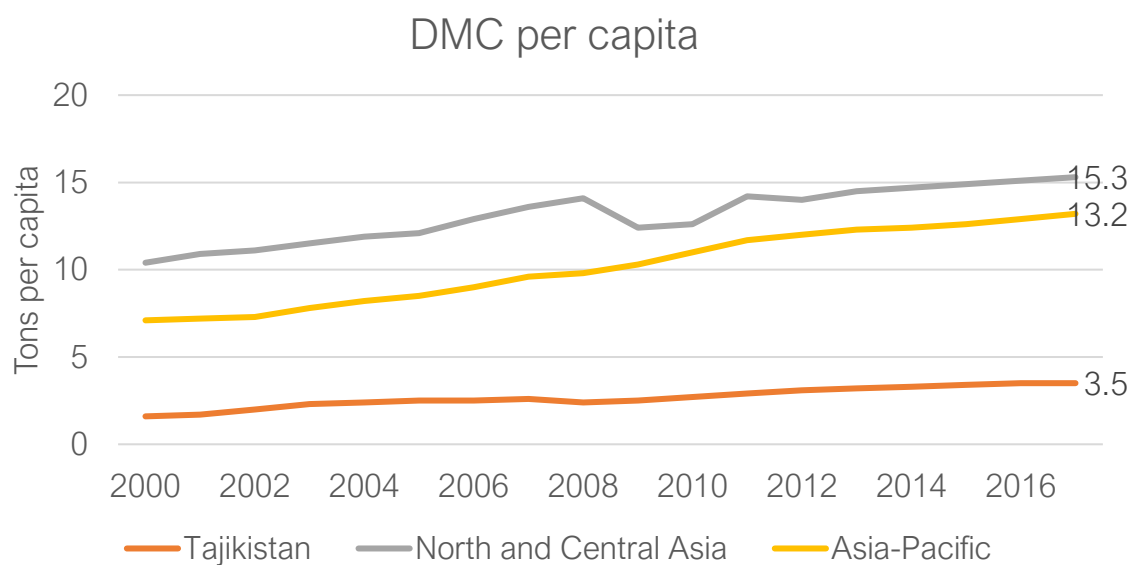
Source: ESCAP Statistical Online Database.

Tajikistan's GDP has more than tripled between 2000 and 2016, and GDP per capita has increased from \$1,180 to \$2,763 in the same period. Despite this rapid recent growth, GDP per capita in Tajikistan remains significantly lower than subregional and regional averages.

## Material use

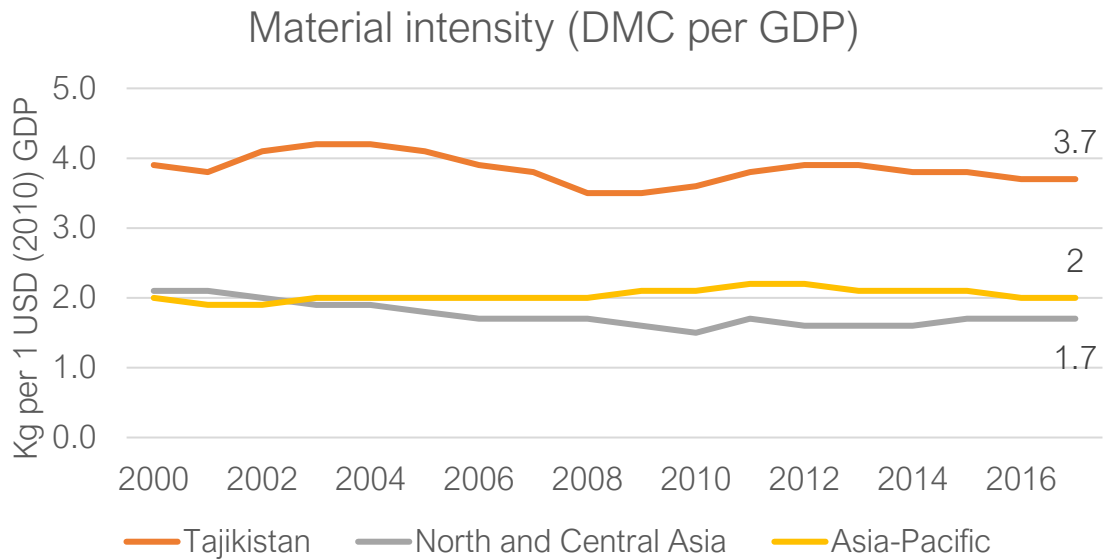


Source: ESCAP Statistical Online Database.



Source: ESCAP Statistical Online Database.

Domestic material consumption (DMC) reports the apparent consumption of materials in a national economy. DMC in Tajikistan has more than tripled between 2000 and 2016, increasing from 10 to 31 million tons during that period. Despite this huge increase in material use, DMC per capita in Tajikistan is substantially lower than subregional and regional averages.

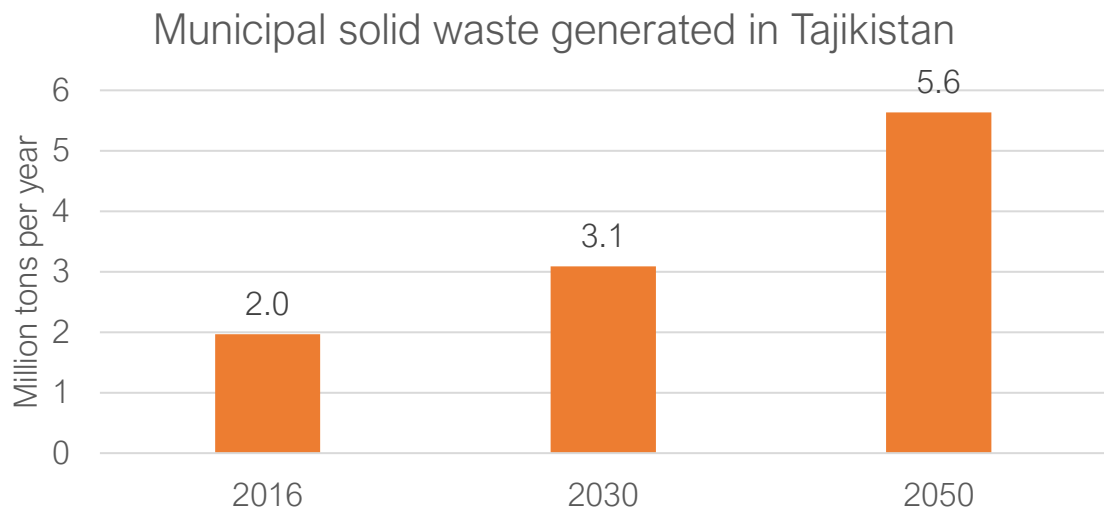


Source: ESCAP Statistical Online Database.

Resource intensity measures the resources (e.g. materials, energy, water) needed to generate a unit of economic output. Lower resource intensities are better and a decrease in resource intensity over time means a country has become more resource efficient.

However, the intensity of material use in Tajikistan is almost double the subregional and regional averages. This provides a huge opportunity for Tajikistan to leverage future growth through more efficient use of the materials that are already available and used.

## Solid waste generation

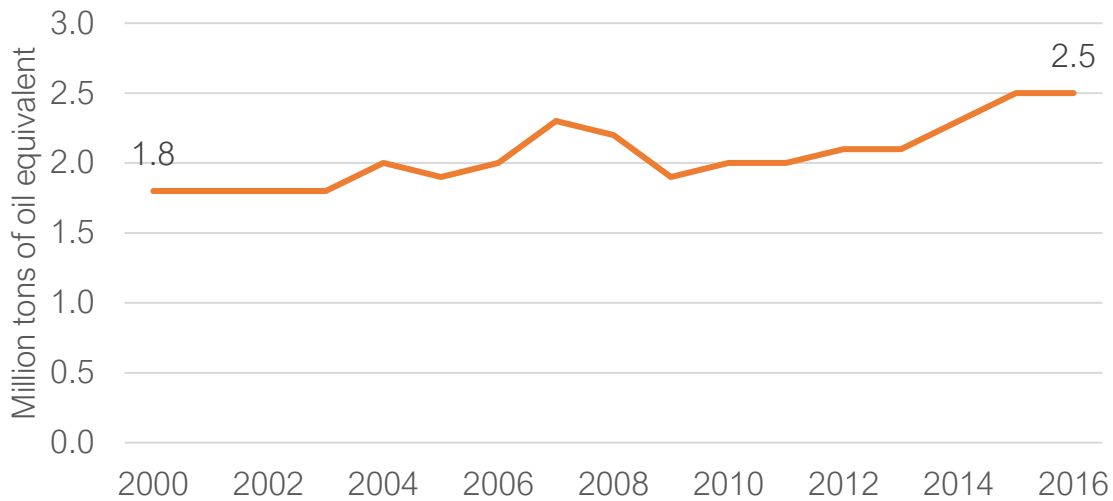


Source: World Bank, What a Waste 2.0 (2018).

The total volume of solid waste generated in Tajikistan's cities is forecasted to almost triple by 2050, increasing from 2.0 million tons per year in 2016 to 5.6 million tons per year by mid-century. Preventing such a rapid increase in waste generation can reduce the waste management burden on municipal budgets, and identifying opportunities to divert waste materials from landfill to productive uses can drive economic growth and opportunities.

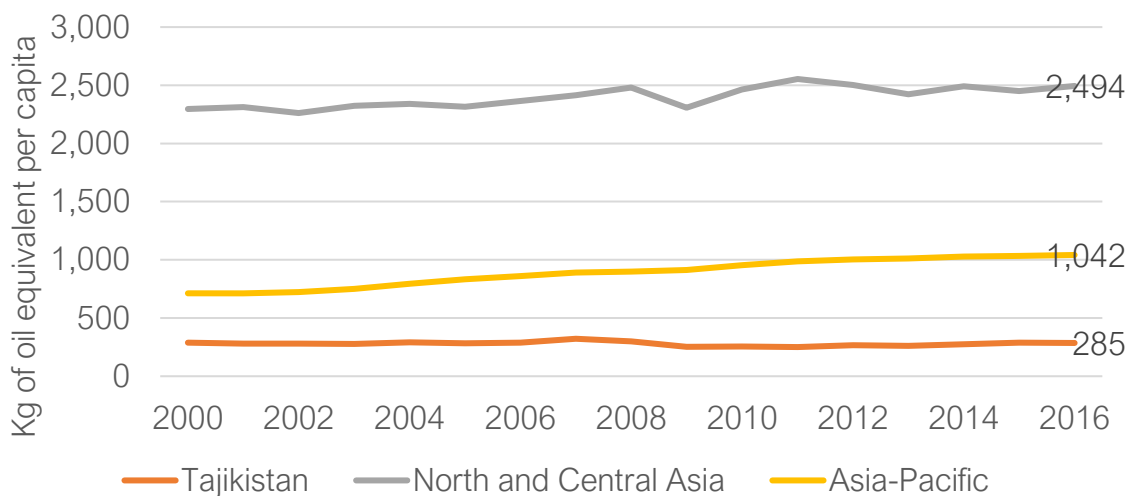
# Energy consumption

## Energy consumption in Tajikistan



Source: ESCAP Statistical Online Database.

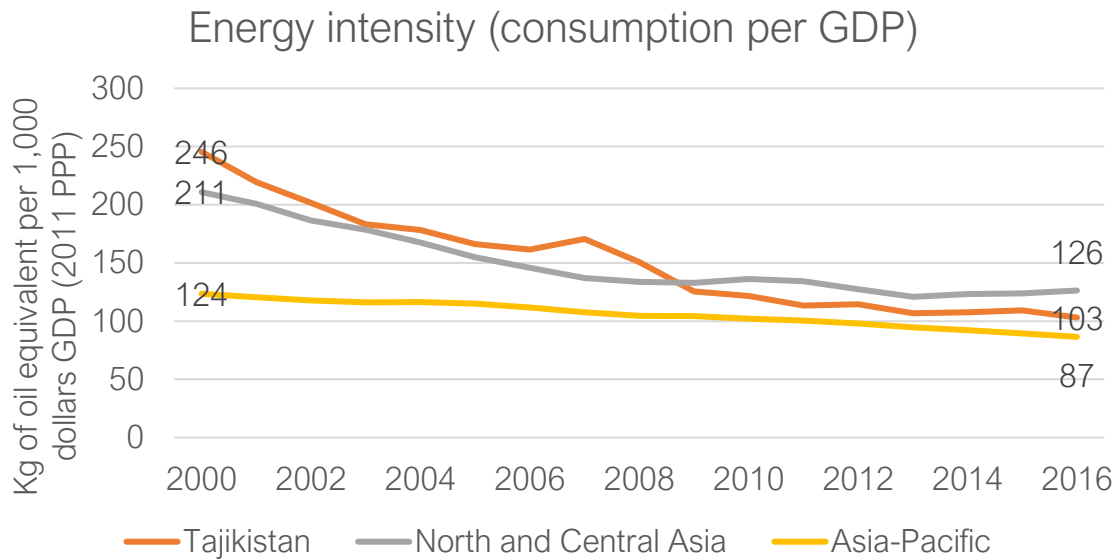
## Energy consumption per capita



Source: ESCAP Statistical Online Database.

Total energy consumption<sup>3</sup> in Tajikistan increased from 1.8 to 2.5 million tons of oil equivalent between 2000 and 2016. Despite this increase, per capita energy consumption remains more than 3.5 times lower than the Asia-Pacific average and almost 9 times lower than the North and Central Asia subregional average.

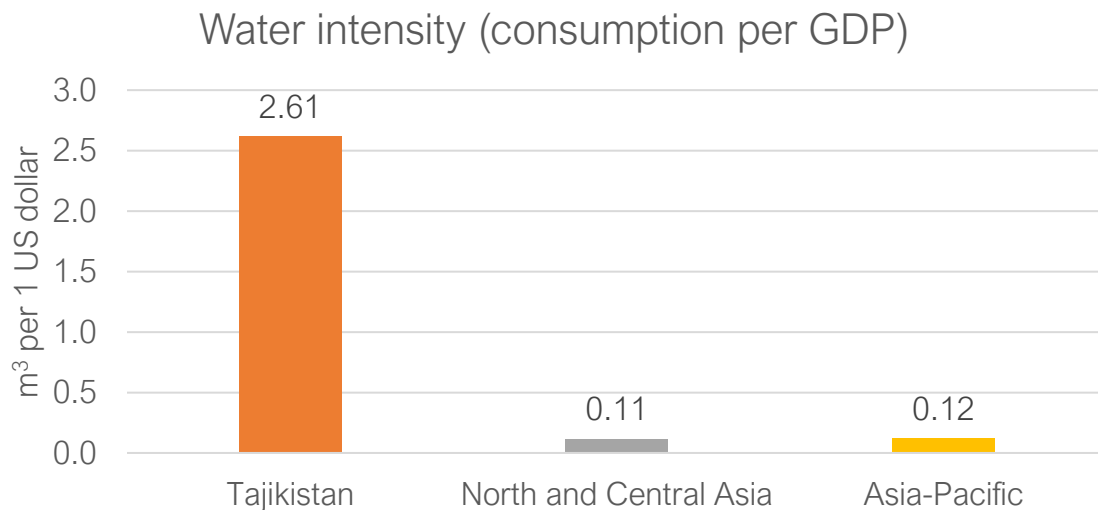
<sup>3</sup> Data for energy consumption is calculated here using Total Final Consumption (TFC), defined as the sum of consumption by the different end-use sectors, excluding the energy consumed during the transformation of energy from primary to secondary.



Source: ESCAP Statistical Online Database.

Tajikistan’s energy intensity is lower than the subregional average but almost 20 per cent higher than the Asia-Pacific regional average. It should be noted that in 2000 Tajikistan’s energy intensity was higher than the North and Central Asia subregional average, but Tajikistan has reduced its energy intensity faster, such that it is now lower than the subregional average. This highlights that substantial reductions in resource intensities are possible.

## Water consumption

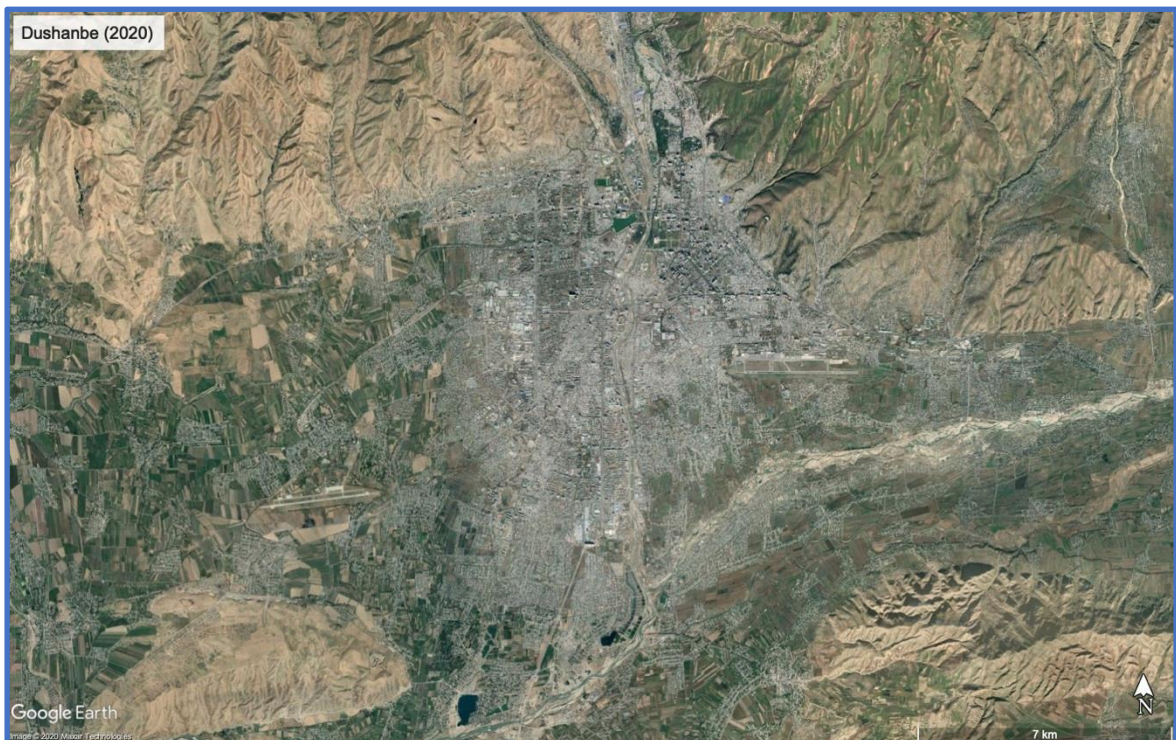


Source: ESCAP Statistical Online Database.

Data on water withdrawal and consumption in the region is less comprehensive, but as per the latest available data Tajikistan uses 2.61 m<sup>3</sup> to realize 1 unit of economic output. Tajikistan’s water intensity exceeds the subregional and regional averages of 0.11 and 0.12 respectively by over 20 times.



## Land use



Source: Google Earth.

Satellite images taken in 2000 and 2020 reveal the substantial increase in Dushanbe's urban land area over that period.