Climate change in Uzbekistan
Illustrated summary

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Management of the CAMP4ASB project in the Regional Environmental Centre for Central Asia: Zafar Makhmudov (Executive Director), Irina Bekmirzaeva (Program Manager)

Contributors: Irina Bubenko, Saltanat Zhakenova, Viktor Novikov, Alexandra Povarich, Geoff Hughes, Dina Adylova

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Uzbekistan is located in the heart of Central Asia and shares major rivers — Amu Darya, Syr Darya, Zeravshan — with its neighbours. A population exceeding 33 million people makes Uzbekistan the most populous country of the region. Its agriculture and industry are well developed and its economy is diversified. Cotton — a highly water-intensive crop — is a major agricultural export, along with fruits and vegetables.

The climate is continental, with hot summers and cool winters. Daily maximums in summer can reach up to 48°C. The deserts of central Uzbekistan receive 100 mm of precipitation, while mountains get over 800 mm per year. There is a trend towards a slight decrease in rainfall, especially in the southern parts of Uzbekistan. Annual temperatures are growing at average rates of 0.27°C per decade. The numbers of hot days and tropical nights are also growing.

Uzbekistan is particularly vulnerable to climate change, and in the absence of additional measures, the nation may face deficiencies in water resources and an increase in land degradation. Climate warming has reduced snow cover and increased evaporation, and Uzbekistan is experiencing an ever greater risk of water deficit. An increase in the frequency and intensity of droughts may lead to instability in agricultural production and threaten the country's food security. Uzbekistan's populated areas and important infrastructure can be affected by heatwaves in summer, floods and mudflows in spring, and avalanches in winter. The lower Amu Darya River suffers from unreliable water supply and salt-and-dust storms.

Adaptation projects in Karakalpakstan — an area considered among the most vulnerable to climate impacts in Uzbekistan — are helping farmers to modernize irrigation networks, introduce drought resistant crops and diversify sources of income. In the Zeravshan basin, farmers are receiving soft loans to build greenhouses, improve the reliability of the water supply and improve horticultural practices. The Uzbek Government is supporting modernization of hydrometeorological services, and the CAMP4ASB project contributes to the expansion of the automated weather observation network.

High reliance on fossil fuels — primarily natural gas — makes Uzbekistan's economy energy intensive. Investments in modernization, improvements in energy efficiency and the introduction of solar and wind power plants have reduced emissions. The energy sector is responsible for slightly more than 80 per cent of the country's emissions, but the share and total contribution of energy emissions is declining. Agricultural emissions — primarily from livestock and cotton production — account for 10 per cent of total emissions. Emissions from waste management are the lowest, but they are growing the fastest.

Uzbekistan

Geography and climate

Deserts and grasslands occupy **80%** of county's area

+48°C max

800 mm per year

20% mountains

100 mm per year

Population and economy

50% urban population

50% rural population

* Metals, mining
* Cement, chemicals
* Cars, equipment

Industry

Services

Agriculture

54% GDP **17%** **24%**

Renewable energy (hydropower) only **3%** of total generation

90% of water consumed is used in agriculture

US $2 360 per person

2018

2010 Economic growth

5% per year

33 million

2019

20 million

1990 Population growth

2019

+100 000 ha

Rapid growth in horticulture

Major producer and consumer of natural gas

Environmental issues

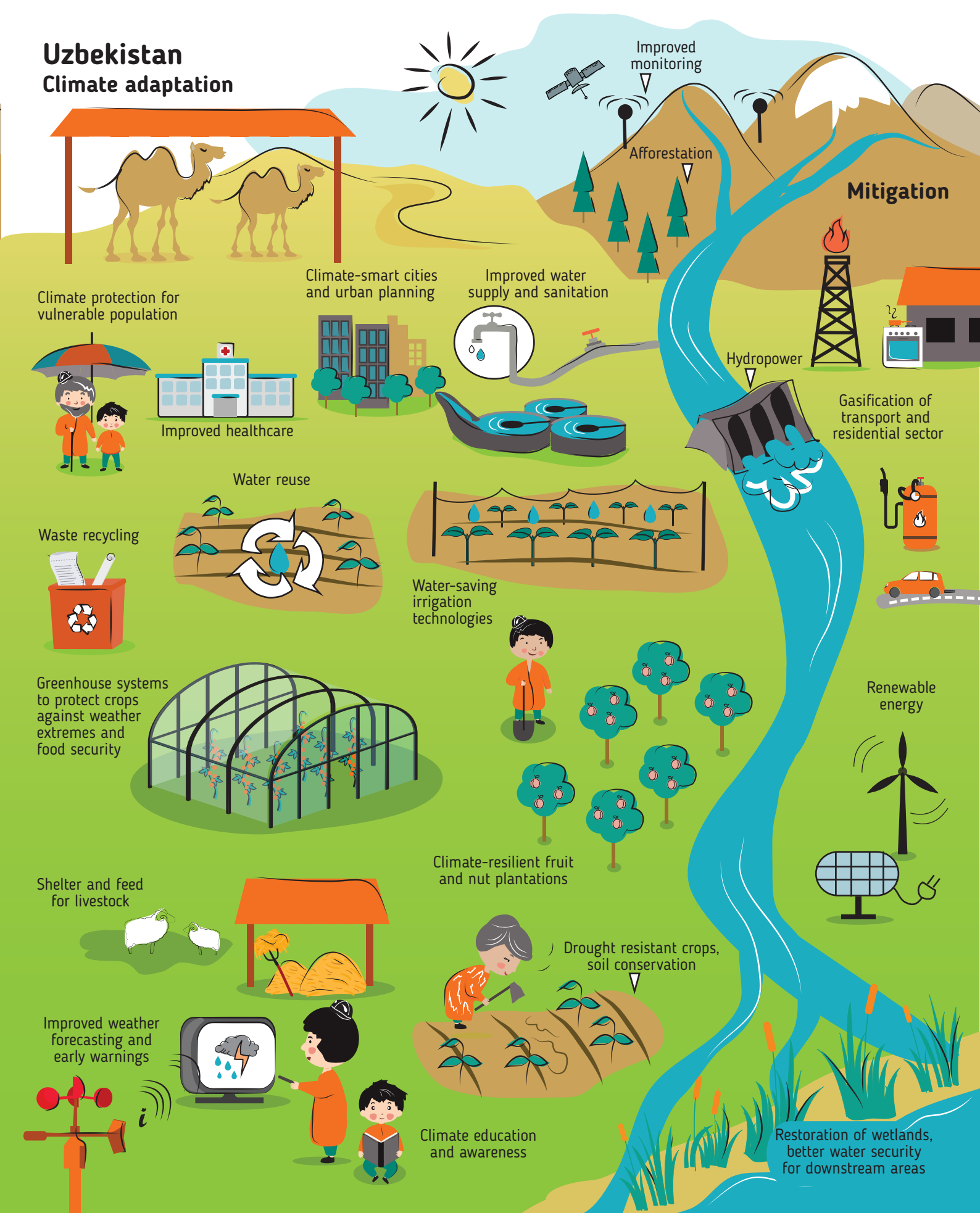
Water deficit and efficiency, soil quality and degradation

Pollution control

Waste management

Drying Aral Sea, dust storms

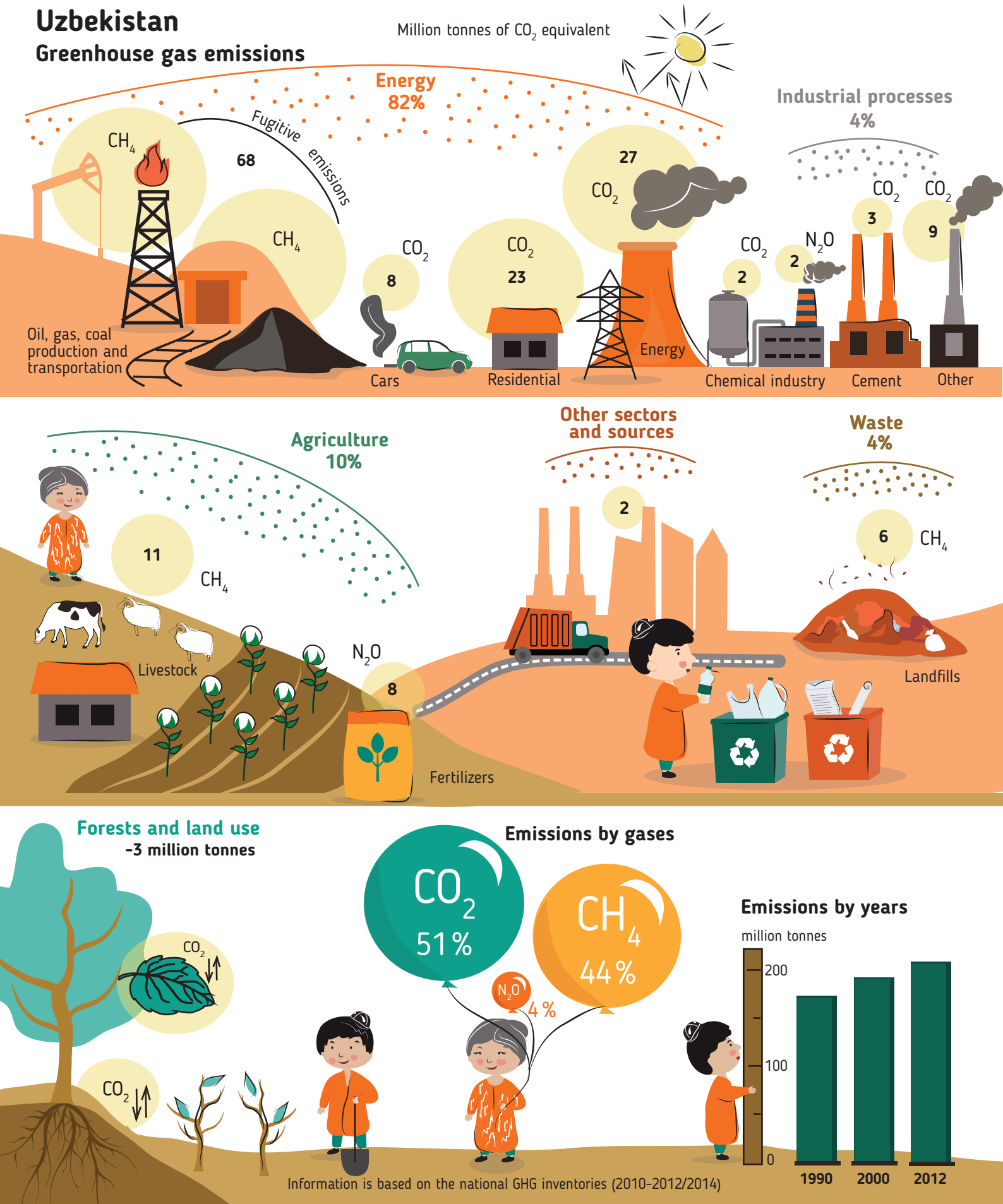
Uzbekistan
Climate adaptation



Uzbekistan

Greenhouse gas emissions

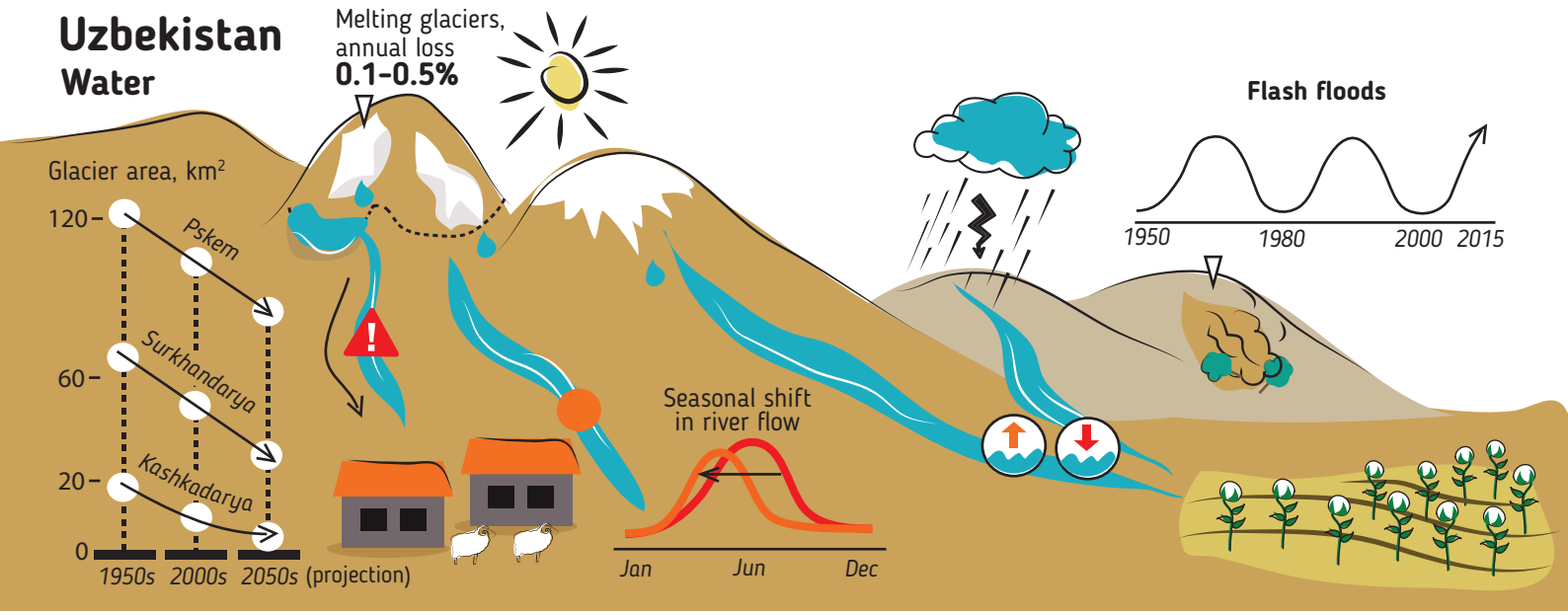
Million tonnes of CO_2 equivalent



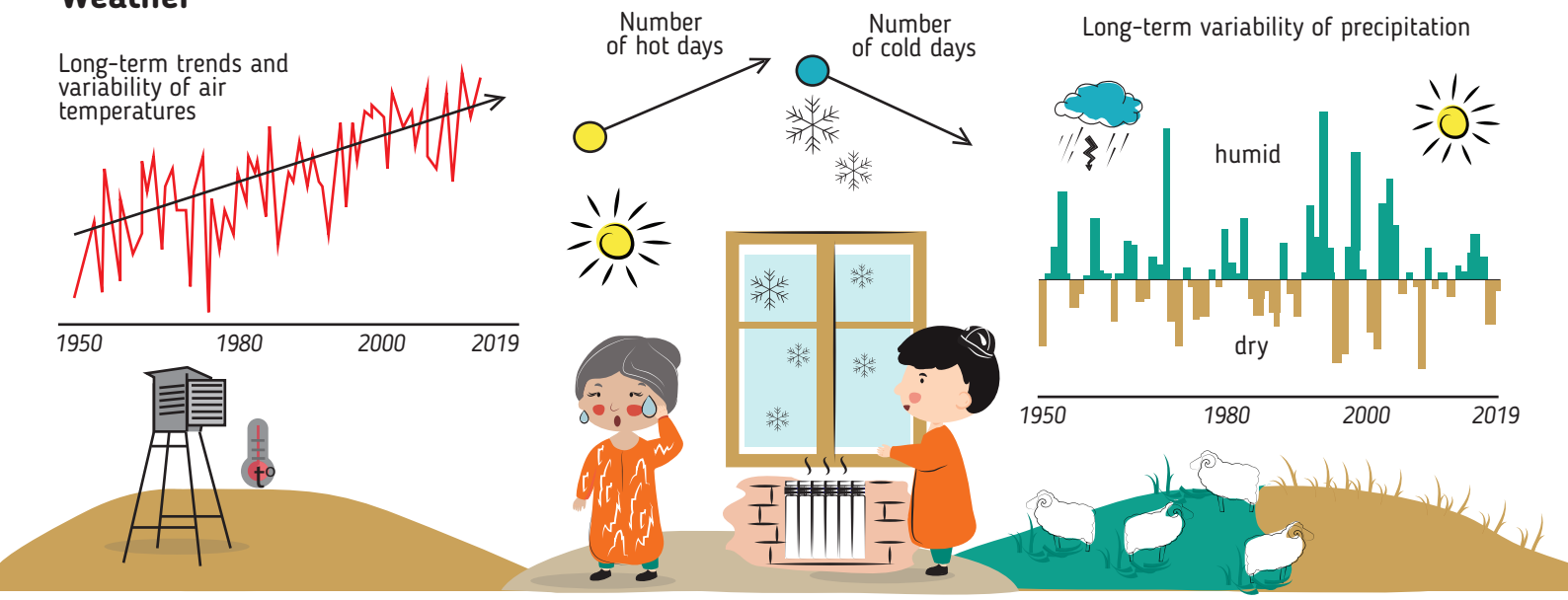
Information is based on the national GHG inventories (2010-2012/2014)

Uzbekistan

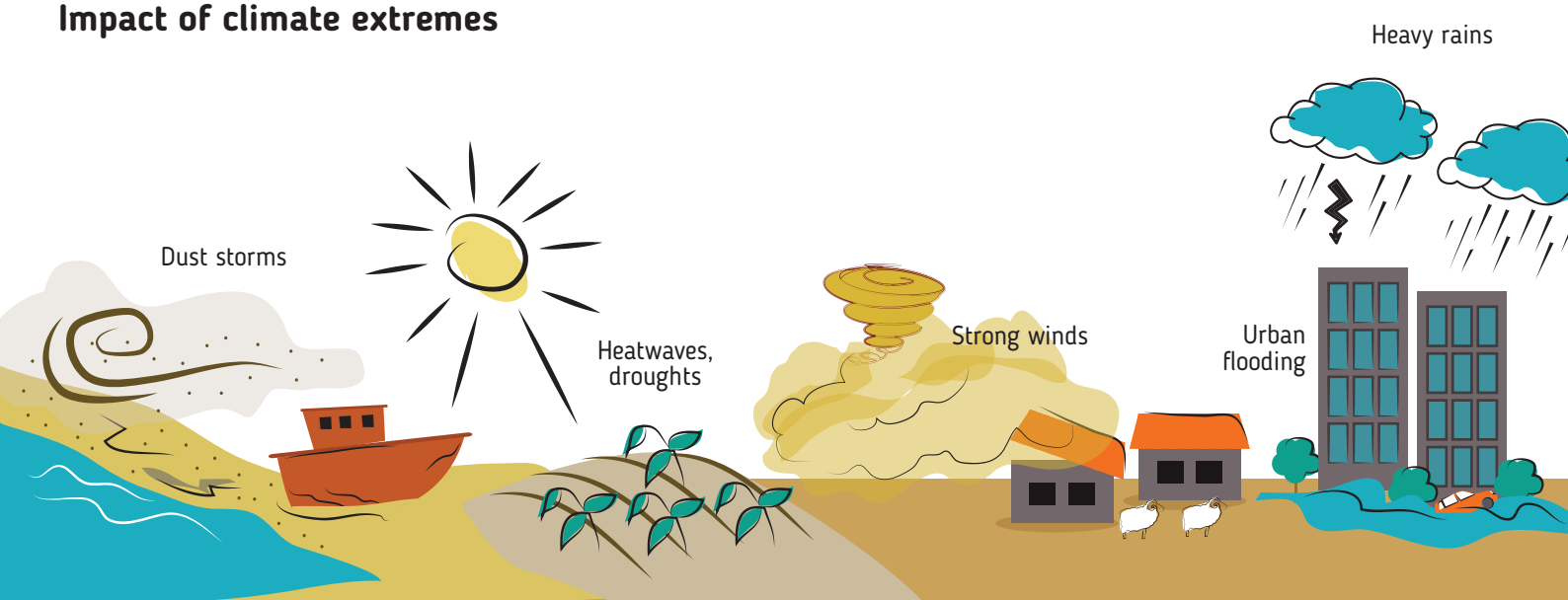
Water

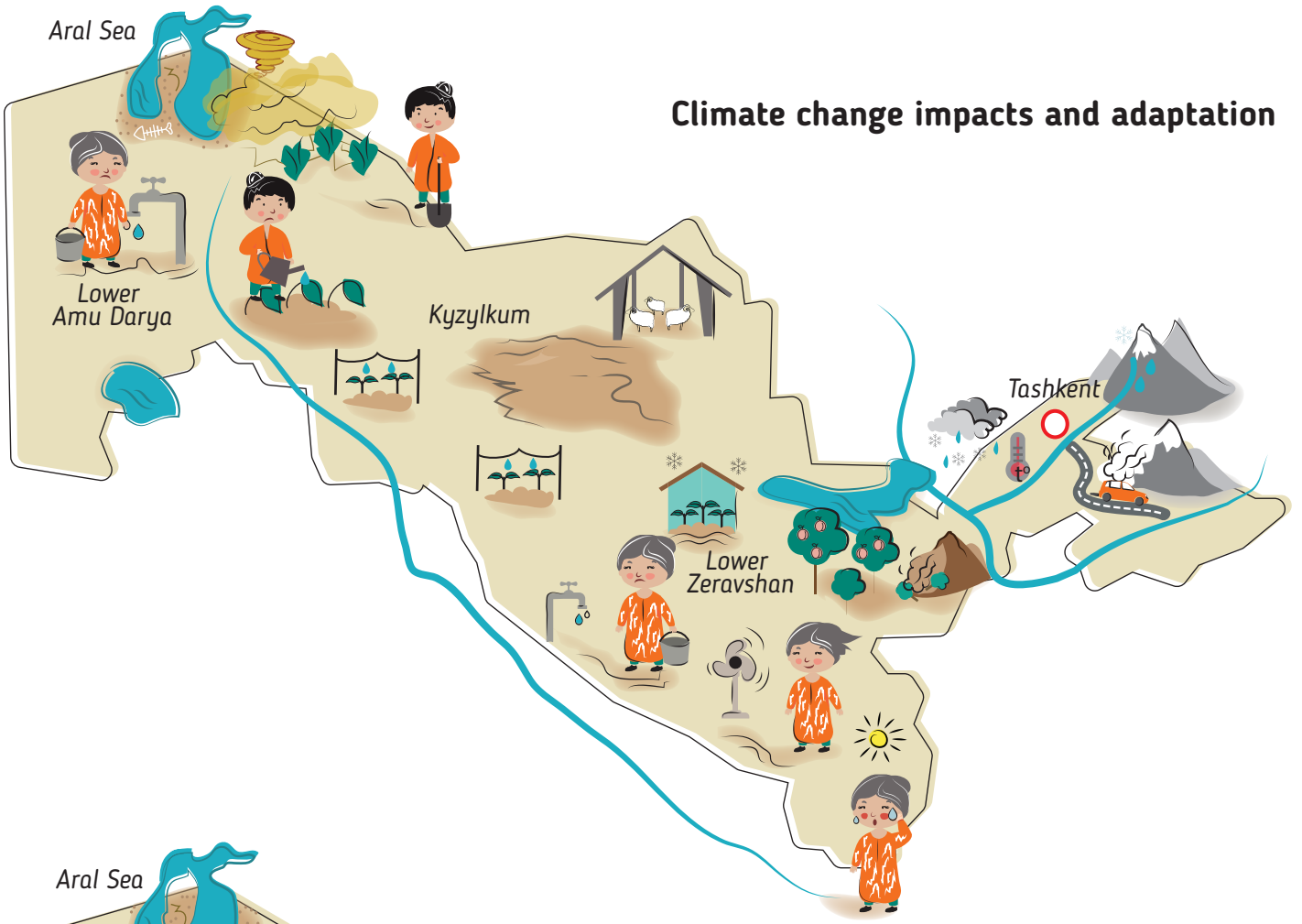


Weather

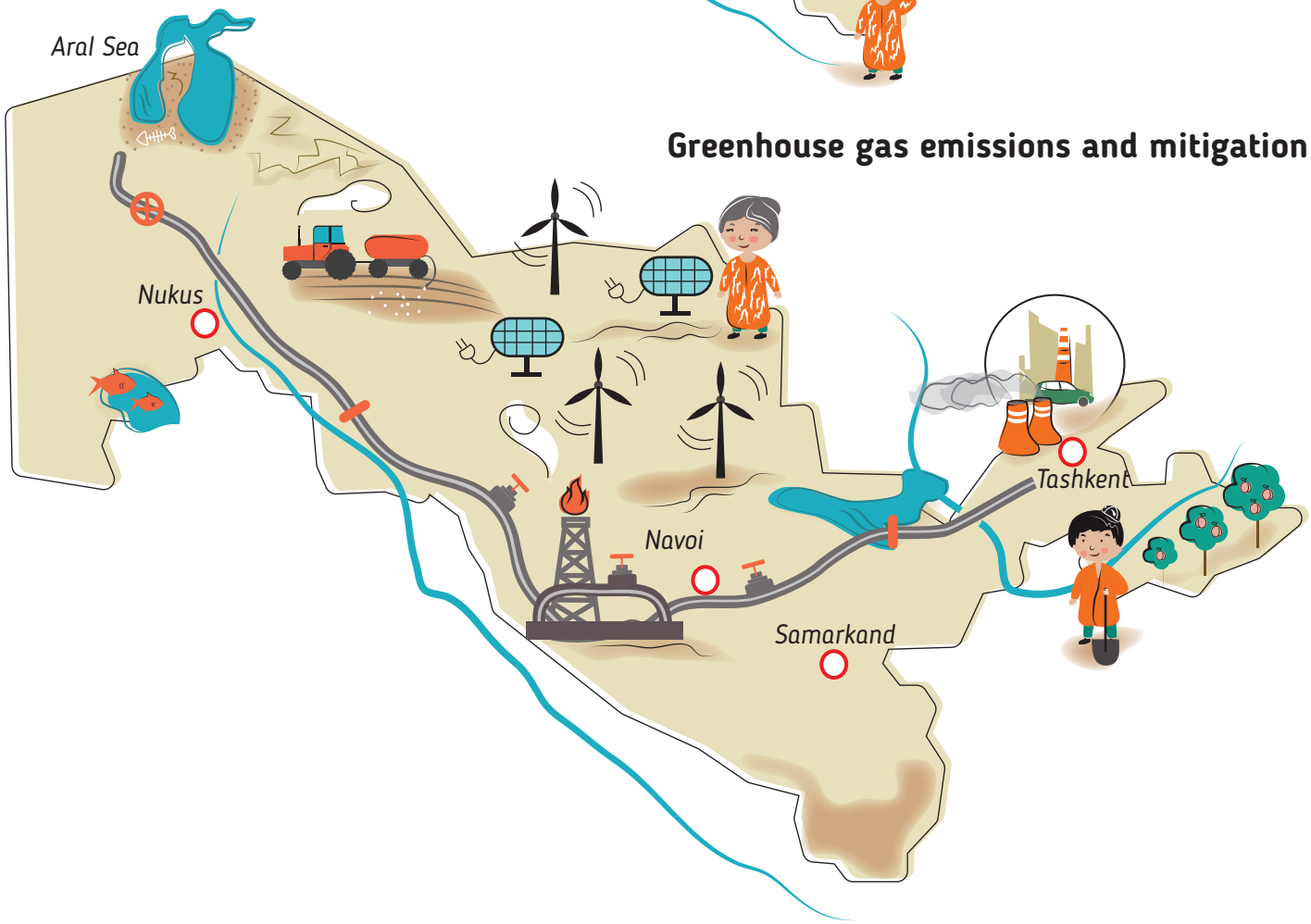


Impact of climate extremes





Climate change impacts and adaptation



Greenhouse gas emissions and mitigation

Useful links

NATIONAL HYDROMETEOROLOGICAL SERVICES OF CENTRAL ASIA: OFFICIAL FORECASTS, CLIMATE AND WATER DATA

Kazakhstan: kazhydromet.kz

Kyrgyz Republic: meteo.kg

Tajikistan: meteo.tj

Turkmenistan: meteo.gov.tm

Uzbekistan: meteo.uz

REGIONAL CLIMATE, WATER AND ENERGY INFORMATION

Central Asia climate information portal: centralasiaclimateportal.org

Central Asia Regional Environmental Centre (CAREC) carececo.org and its climate web-page: ca-climate.org

Central Asia Interstate Commission on Sustainable Development (ICSD): mkurca.org

Central Asia water and environmental information portal: cawater-info.net

Central Asia Water and Energy Programme: worldbank.org/en/region/eca/brief/cawep

GLOBAL CLIMATE INFORMATION AND DATA PORTALS

UN Framework Convention on Climate Change (UNFCCC) greenhouse gas data by countries: di.unfccc.int/detailed_data_by_party

UN Framework Convention on Climate Change (UNFCCC) national communications: unfccc.int/non-annex-I-NCs and https://unfccc.int/NC7

Intergovernmental Panel on Climate Change: ipcc.ch

International Energy Agency: iea.org

weADAPT: weadapt.org and climate action in the mountains adaptationataltitude.org

World Bank climate change knowledge portal: climateknowledgeportal.worldbank.org

World Meteorological Organization, climate data catalogue: climatedata-catalogue.wmo.int

Contacts

The Regional Coordination Unit for CAMP4ASB,
Regional Environmental Centre for Central Asia (CAREC)
P0 Orbita-1, Republic of Kazakhstan, A15D5B3
camp4asb@carececo.org
+7 727 265 43 34
carececo.org
ca-climate.org

UZBEKISTAN

The National Coordination Unit for CAMP4ASB
under the Agro Industry and Food Security Agency of the Republic of Uzbekistan
Labzak 1A St., Tashkent, Republic of Uzbekistan, 100000
info@rra.uz
+998 71 241 45 30
uzaifsa.uz

Center of Hydrometeorological Service (Uzgidromet)
72, 1st Proyezd Bodomzor Yuli, Tashkent, Republic of Uzbekistan, 100052
uzhymet@meteo.uz
+998 71 237 35 11, +998 71 235 73 93
meteo.uz