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Central and South Asia Climate Risk Report – Central Asia

HEADLINE CLIMATE STATEMENTS

Central Asia has warmed by around 0.3 to 0.4°C per decade from 1980 to 2015.

By the 2050s*, annual average temperatures in Central Asia will be between 2 to 6°C warmer, under the highest emission scenario, or 1 to 4°C warmer under a medium emissions scenario, relative to a 1981-2010 baseline. Average summertime temperatures in northern areas of Kazakhstan will experience the highest rates of warming, resulting in a significant increase in wildfire weather.

By the 2050s, the intensity, number, and duration of heat extremes, heatwaves, and droughts will increase across Central Asia, particularly in northern and southwestern areas, irrespective of the warming level.

Future changes in precipitation (rainfall and/or snowfall) over Central Asia are more uncertain than temperature changes, and vary geographically.

Kazakhstan, Turkmenistan, and Uzbekistan are unlikely to become significantly wetter on average, but there is medium confidence for wetter winter and spring months in higher elevation Central Asia (eastern Uzbekistan, Tajikistan, Kyrgyzstan, northern Afghanistan).

In the high mountain regions of Asia, including those in Central Asia, rainfall will continue to replace snowfall causing earlier snowmelt and a shift in seasonality of downstream river flow.

Extreme rainfall will become more intense and frequent in Central Asia, particularly in the mountainous regions of eastern Central Asia.

By the 2050s, the sea surface temperatures for the Caspian Sea could increase by 2 to 3°C under a high emission scenario, relative to a 1980-2010 baseline.

The Caspian and Aral Seas will continue to shrink by several metres, exacerbating drought conditions in Central Asia.

Peak flow of rivers in Central Asia will be reached before or by the 2050s, after which glacial meltwater will decline, exacerbating the shrinkage of the Aral Sea.

*The 2050s refer to the 2041-2060 time period