

# State of the Climate 2020 Asia

The State of the Climate (SoC) in Asia 2020 is the first of its kind, multi-agency effort to provide science-based knowledge on the state of climate in Asia and its inter-connection with sustainable development in the region.

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## Climate Indicators



### Temperature

In 2020, the average land surface air temperature over Asia was approximately 1.39 °C above its 1981-2010 average, the highest on record.



### Glacier Mass Balance

In the past 40 years, all four glaciers with relative long-term observations in the High Mountain Asia region experienced mass loss, with an accelerating trend in the 21st century.



### Sea Ice Extent

In summer 2020, the Eurasian shelf seas and the Northern Sea Route were completely ice free and the 3.9 million square kilometers minimum sea-ice extent reached in September is the second lowest minimum sea-ice extent since 1979.



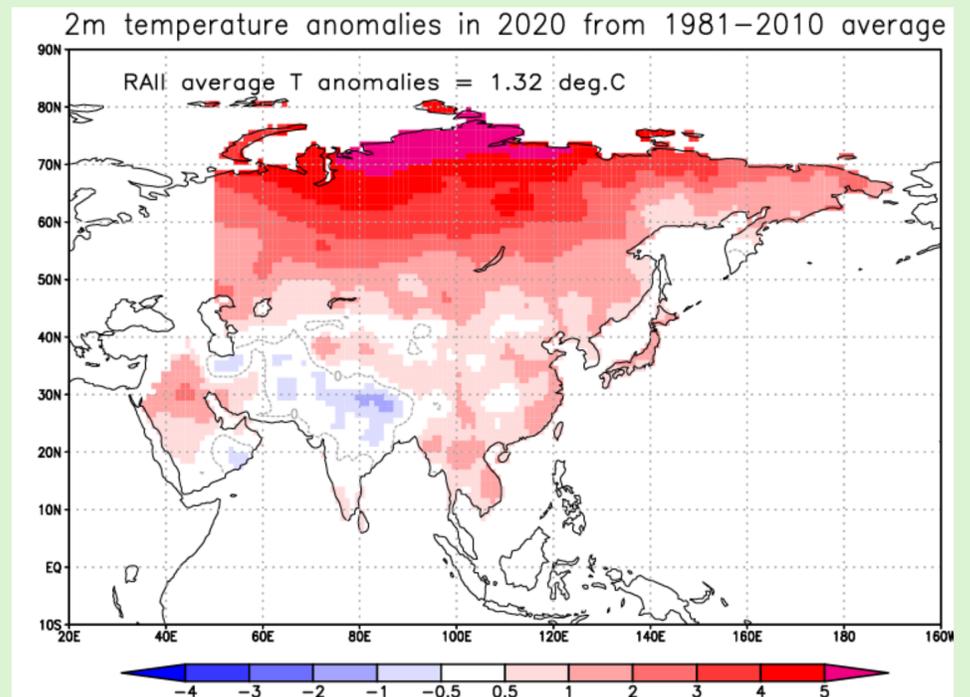
### Sea Level Rise

In Asia, the North Indian Ocean (3.70 +/- 0.1 mm/year) and the northwest Pacific Ocean (3.68 +/- 0.1 mm/year), the rates of sea level change are significantly higher than the global mean rise.



### Sea Surface Temperature & Ocean Heat Content

The Asian oceanic area showed an overall warming trend in 2020. The areas of the Kuroshio current system, the Arabian Sea, the southern Barents and Kara Sea and the southeastern Laptev Sea had rates 3x larger than the global surface ocean warming rate.



## Extreme Events



### TROPICAL CYCLONES

Cyclone Amphan, one of the strongest cyclones ever recorded, hit densely populated coastal areas in Bangladesh and India during the rapid spread of COVID-19 in May 2020.



### PRECIPITATION

An unusual wet spell persisted in the summer over the regions from the Yangtze River basin to the Republic of Korea to western and eastern Japan, associated with the persistent East Asian summer monsoon. In China, the cumulative monsoon rainfall over the affected region was the highest since records began in 1961.



### FLOODS

In 2020 floods and storms affected approximately 50 million people, including over 5 000 lives lost in the region. In Karachi, a devastating urban flooding event occurred, affecting millions of people and inflicting widespread infrastructure damage.



### SANDSTORMS

Saudi Arabia experienced major sand and dust storms on 9-10 May with winds exceeding 56 km/h. The strongest sand and dust storm occurred in north-western China during 8-10 March, affecting agricultural facilities, aircraft shipping and air pollution.



### HEAT WAVES

Many parts of Asia and surrounding oceans experienced heat events in 2020. Temperatures reached 38.0 °C at Verkhoyansk on 20 June, provisionally the highest known temperature anywhere north of the Arctic Circle.

## Impacts



### FOOD SECURITY

48.8 million people in South-East Asia, 305.7 million in South Asia, and 42.3 million in West Asia are estimated to have been undernourished in 2020. Extreme events contributed to worsening the food insecurity situation in many countries already afflicted by conflict and COVID-19.

### SOCIOECONOMIC DEVELOPMENT

Extreme events such as tropical cyclones, floods and droughts induced an estimated average annual loss of several hundred billion dollars. Over the long term, climate change also adversely affects human and ecosystem health, causing additional costs and challenges.

### DISPLACEMENT

Climate and weather events had major and diverse impacts on population movements and on the vulnerability of people on the move in Asia throughout 2020. Cyclone Amphan displaced 2.4 million people in India, and 2.5 million people in Bangladesh. During monsoon season, torrential rainfall and ensuing flooding and landslides through the Rohingya refugee settlements in Cox's Bazar, Bangladesh, forced refugees living there to be displaced once again.



## Climate Policy



WORLD METEOROLOGICAL ORGANIZATION

Supporting resilient recovery from the pandemic and the achievement of the 2030 Agenda for Sustainable Development requires a better understanding of risks, investment in renewable energy and frontier technologies, health, environment, and social protection, and ensuring targeted and forward-looking fiscal spending. It is essential to adapt and build resilience to climate variability and change and to extreme climate events, especially in high-risk and low-capacity parts of the region. The Global Framework for Climate Services provides guidance on the implementation of operational systems and services needed to support adaptation and resilience development projects and programmes that respond to the priorities identified by Parties in their Nationally Determined Contributions to the Paris Agreement.