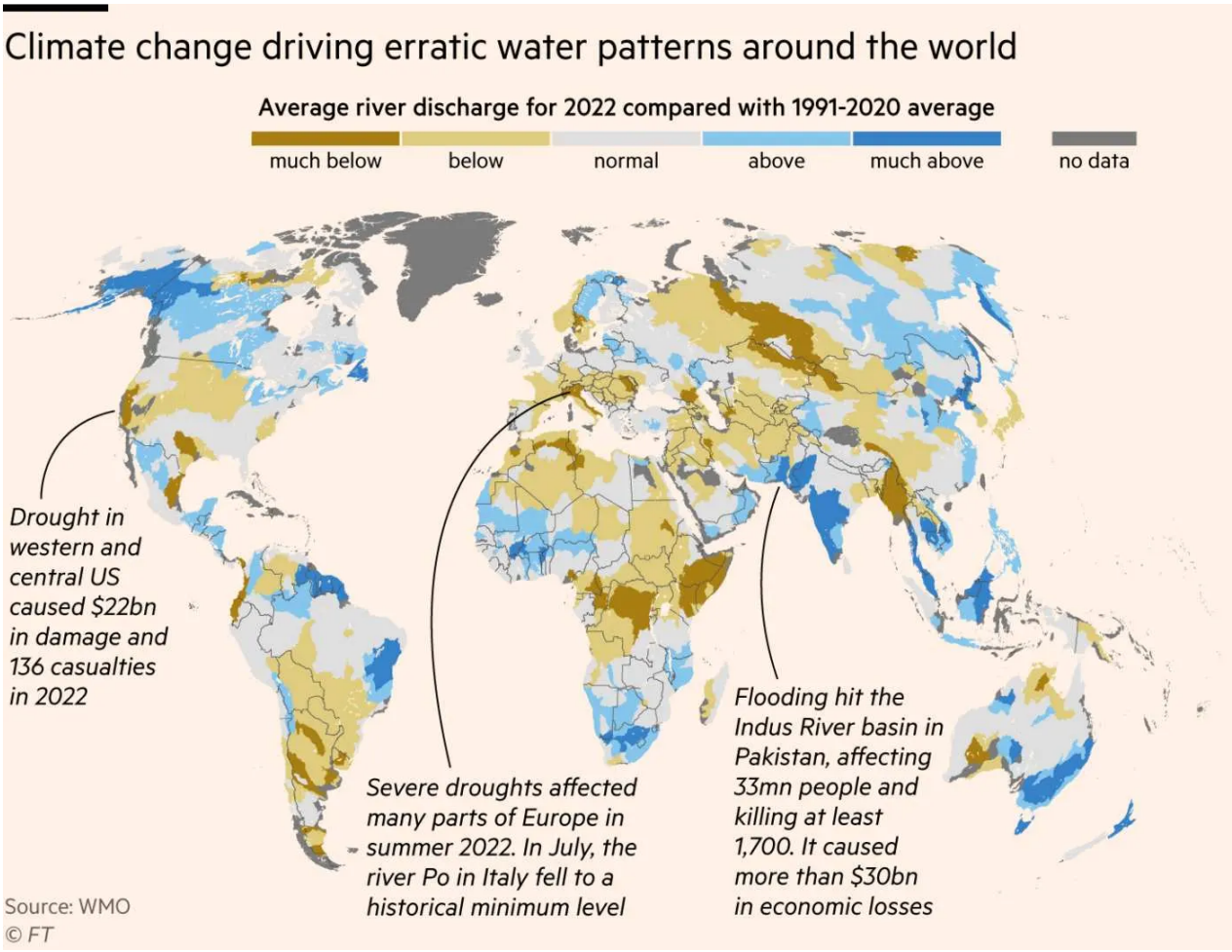
Climate change

Global water cycles are 'spinning out of balance', weather agency reports

World Meteorological Organization forecasts new patterns of both extreme flooding and drought across the globe



Aime Williams in Washington OCTOBER 12 2023

The world will experience an "increasingly erratic" water cycle as climate change drives new patterns of both extreme flooding and drought across the globe, the World Meteorological Organization has forecast.

The agency said hydrological cycles were "spinning out of balance" and that more robust monitoring systems were needed, particularly in Africa, the Middle East and Asia, as it released a report on global water patterns in 2022.

Droughts, extreme rainfall and melting snow and glaciers threatened long-term water security, the WMO said, underscoring the need for monitoring apparatus and better sharing of cross-border data on water patterns.

"Glaciers and ice cover are retreating before our eyes. Rising temperatures have accelerated — and also disrupted — the water cycle," said WMO secretary-general Petteri Taalas.

"A warmer atmosphere holds more moisture. We are seeing much heavier precipitation episodes and flooding. And at the opposite extreme, more evaporation, dry soils and more intense droughts," he said.

Taalas said an "overwhelming majority" of disasters were "water related", and more timely and accurate hydrological data could help develop useful early warning systems for regions exposed to flooding or drought.

A flood that burst through a hydroelectric dam in India's Himalayan north-east last week killed at least 31 people, the Associated Press reported, when a glacial lake overflowed after a heavy rainfall. Ice cold water swept through mountain towns, washing away houses and forced thousands to evacuate.

Buildings were inundated after flash floods swamped Rangpo, India, last week © AP

The latest water report is only the second such analysis released by the WMO and aims to identify patterns in river discharge, reservoir inflow and groundwater levels across the globe.

It found that more than half of global water catchment areas and reservoirs "deviated" from normal conditions over 2022, with the majority of them being drier than usual.

While some areas of the world faced drought, others suffered from extreme flooding. The report observed that the Yangtze river basin in China had faced "severe" drought at the same time as Pakistan's Indus river flooding resulted in nearly 2,000 fatalities and displaced 8mn people.

In the European Alps, snow cover remained "significantly" below the 30-year average, the WMO said, affecting the discharge of major rivers on the continent.

Total glacier mass balance has declined by more than 4 per cent between 2000 and 2018 across the Tibetan Plateau, the Himalayas, the Karakorum, the Hindu Kush, the Pamirs and the Tien Shan Mountains, in turn affecting the run-off to big river basins.

Weather agencies last month definitively declared the return of the El Niño weather phenomenon, which involves the heating of the Pacific Ocean and drives changes in temperature and rainfall patterns across the world.

During an El Niño period, South America, the southern US and the Horn of Africa would likely experience an increase in rainfall and potential flooding, while Australia and Indonesia are more at risk of experiencing drought.

Scientists have warned that climate change affects the intensity and frequency of rain and can "supercharge" extreme weather events.

Temperatures have risen at least 1.1C since the pre-industrial era, and each fraction of a degree of warming has an exponential effect.

Climate Capital

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