

To Stay Afloat, India Needs to Adapt

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The Intergovernmental Panel on Climate Change (IPCC) sixth assessment report (AR6) of working group 1 – ‘The Physical Science Basis’ has reinforced our worst fears about the state of climate. The signs of climate change have been visible for sometime now. Extreme events in different parts of the world – heat waves in North America, floods in Europe and Asia, and droughts in Africa – have left a trail of destruction and death, challenging the disaster management systems in place.

Recently, India witnessed two intense cyclones, devastating floods in the states of Bihar, Himachal Pradesh, and Uttarakhand, and extreme temperatures, leading to heat waves. Deaths have also been reported with melting glaciers causing flash floods in the Himalayan region, and landslides in Uttarakhand, lightning strikes and thunderstorms in Uttar Pradesh and Rajasthan.

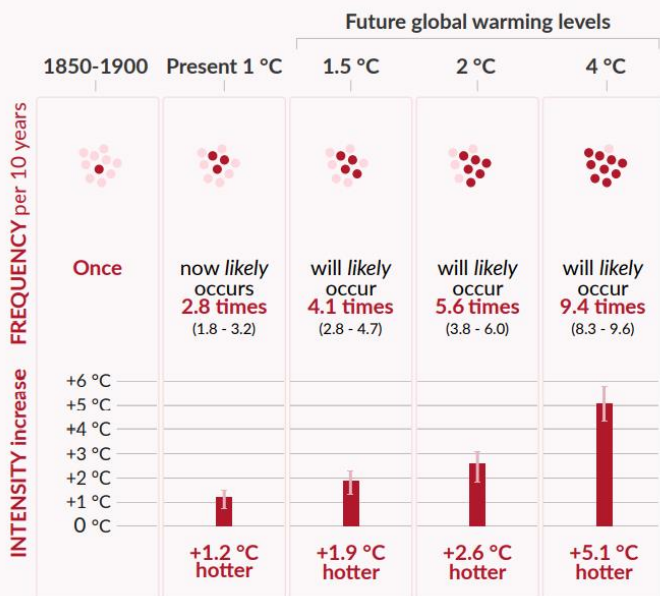
What’s in store

The key conclusion of IPCC fifth assessment report that humans are responsible for warming the planet is further iterated through insights into regional climates in AR6. The report indicates a warmer and wetter future, with increase in the frequency and intensity of hot extremes, agricultural and ecological droughts in some regions, and reduction in sea ice, snow cover, and permafrost. It also warns that changes due to greenhouse gas (GHG) emissions such as sea level rise and ice sheet melting will be irreversible. In South Asia, while summer monsoon precipitation and interannual variability is projected to increase, heatwaves and humid heat stress are projected to be [more intense and frequent during the 21st century](#).

Hot temperature extremes over land

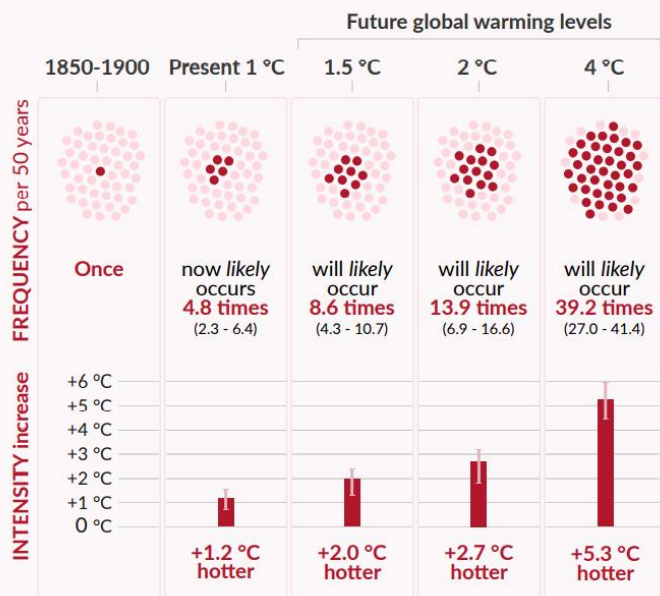
10-year event

Frequency and increase in intensity of extreme temperature event that occurred **once in 10 years** on average in a climate without human influence



50-year event

Frequency and increase in intensity of extreme temperature event that occurred **once in 50 years** on average in a climate without human influence

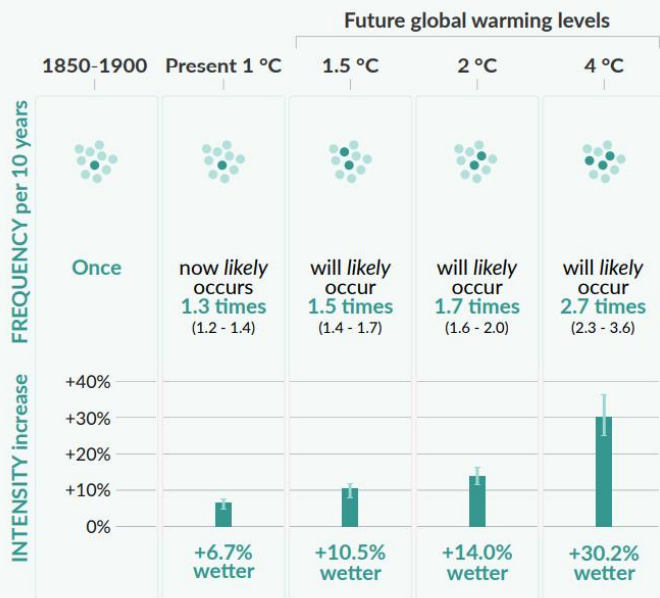


Source: IPCC

Heavy precipitation over land

10-year event

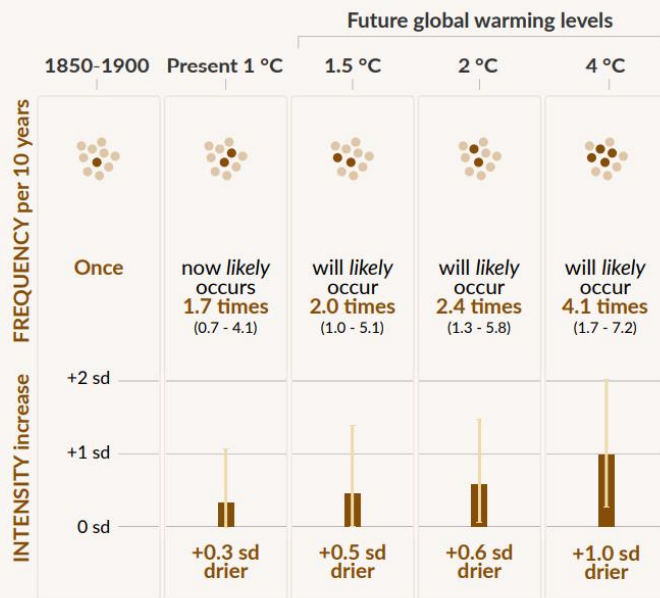
Frequency and increase in intensity of heavy 1-day precipitation event that occurred **once in 10 years** on average in a climate without human influence



Agricultural & ecological droughts in drying regions

10-year event

Frequency and increase in intensity of an agricultural and ecological drought event that occurred **once in 10 years** on average across drying regions in a climate without human influence



Source: IPCC

Indian dilemma

India's Intended Nationally Determined Contributions (INDC) commitments are aimed at achieving about 40% cumulative electric power installed capacity by 2030, and creating an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030. To achieve its INDC commitments, the Government of India has already embarked on an energy transition pathway to renewable energy sources: 175 GW by 2022 and 450 GW by 2030. At the same time, India also unveiled a new set of amendments to push for coal mining that allows mines with valid approvals, clearances, and licences, to continue till reserves are exhausted, as a means to kickstart the economy post the first wave of COVID in 2020.

The interlinkages

The projected changes in climate for South Asia and India have implications for both INDC commitments as well as post-COVID recovery plans. It is clear from the recent events that climate change is a threat multiplier. For instance, intense heat events not only threaten lives, but also drive up power consumption, which in turn is likely to lead to more and more people turning to air-conditioners and air coolers. Currently, just about 5% of Indian households have air conditioning compared to 60% in China, and a still higher number in the United States, the top two emitters. Heat events invariably coincide with droughts, which have implications for agriculture. Heat is also linked to the cooling needs of buildings, and power generation — thermal power plants need water for cooling. Likewise, intense rainfall events causing floods could lead to disruption in power supply due to short circuits, damage to transmission infrastructure, agriculture losses, coastal infrastructure damage, etc., with potentially severe consequences for food, farming, and the economy.

Given this, India will have to consider in its planning, the full range of possible changes in climate and emerging risks — not just one but multiple, which could compound the severity of climate change in certain regions. It is only through

enhanced investments in programmes that are targeted towards adaptation, and integration of climate risk into development and infrastructure programmes and projects, that India can strengthen its policy framework that pushes for action on the ground to deal with climate change.