

Climate change is hitting the planet faster than scientists originally thought

Latest IPCC climate report warns that rising greenhouse-gas emissions could soon outstrip the ability of many communities to adapt.

Jeff Tollefson



The climate crisis has already negatively affected places such as Bangladesh, where river-bank erosion has cost people their homes. Credit: Zakir Hossain Chowdhury/Barcroft Media/Getty

The negative impacts of climate change are mounting much faster than scientists predicted less than a decade ago, [according to the latest report from a United Nations climate panel](#). Many impacts are unavoidable and will hit the world's most vulnerable populations hardest, it warns — but collective action from governments to both curb

greenhouse-gas emissions and prepare communities to live with global warming could yet avert the worst outcomes.

“The cumulative scientific evidence is unequivocal,” says Maarten van Aalst, a climate scientist who heads the Red Cross Red Crescent Climate Centre in Enschede, the Netherlands, and is a co-author of the report. “Any further delay in global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all.”



IPCC climate report: Earth is warmer than it's been in 125,000 years

The report, released on 28 February, is the second instalment of the latest climate assessment from the UN Intergovernmental Panel on Climate Change (IPCC). [Issued last August](#), the first instalment focused on recent climate science, whereas the latest one looks at the impacts of climate change on people and ecosystems. It will be followed in early April by a third instalment that evaluates humanity's options for battling climate change, including ways of reducing greenhouse-gas emissions. This is the sixth such assessment from the IPCC in a little over three decades, and the warnings have only become more dire.

Advocates hope the latest assessment will finally spur governments to tackle the climate crisis decisively.

“I've seen many scientific reports in my time, but nothing like this,” said UN secretary-general António Guterres during a press conference unveiling the report. It is a “damning indictment of failed climate leadership”, he added.

Key points from the report:

- Between 3.3 billion and 3.6 billion people — more than 40% of the world's population — live in places and in situations that are “highly vulnerable to climate change”, the report estimates. Some are already experiencing the effects of climate change, which vary by region and are driven by factors such as geography, how that region is governed and its socio-economic status. The report also references for the first time “historical and ongoing patterns of inequity such as colonialism” that contribute to many regions' vulnerability to climate change.

- Although additional finance and planning could help many communities to improve their preparations for climate change, humanity will soon hit “hard limits” to its ability to adapt if temperatures continue to rise, the report says. For instance, coastal communities can temporarily buffer themselves from extreme storms by



Top climate scientists are sceptical that nations will rein in global warming

restoring coral reefs, mangroves and wetlands, but rising seas will eventually overwhelm such efforts, resulting in coastal erosion, flooding and loss of freshwater resources.

- Climate change has already caused death and suffering across the world, and it will continue to do so. In addition to contributing to deaths by helping to trigger disasters such as fires and heatwaves, it has affected public health in various ways. Smoke inhalation from fires has contributed to cardiovascular and respiratory problems, for instance, and increased

rainfall and flooding has led to the spread of diseases such as cholera. Mental-health issues, tied to the trauma of living through extreme events and to loss of livelihood and culture, are also on the rise.

- If global temperatures rise by more than 1.5 °C above pre-industrial levels, some environmental changes could become irreversible, depending on the magnitude and duration of the ‘overshoot’ beyond this threshold. In forests and Arctic permafrost zones that act as carbon dioxide reservoirs, for instance, extreme global warming could lead to the release of excess carbon emissions, which would in turn drive further warming — a self-perpetuating cycle.

- Sustainable economic development must include protection for biodiversity and natural ecosystems, which secure resources such as fresh water and coastlines that shield against the effects of storms, the report says. Multiple lines of evidence suggest that maintaining the resilience of biodiversity and ecosystems as the climate warms will depend on “effective and equitable conservation of approximately 30% to 50% of Earth’s land, freshwater and ocean areas”.

More than 270 researchers from 67 countries authored the latest IPCC report. Here’s what some are saying about its importance:

Adelle Thomas, a geographer at the University of the Bahamas in Nassau. The most important message coming from the report from my perspective is that losses and damages are widespread and being felt now. Unfortunately, these negative impacts of climate change are disproportionately affecting the most vulnerable and marginalized communities around the world. Also crucial is evidence showing that people and ecosystems are already reaching limits to adaptation, where they have surpassed their capacities to prevent negative impacts of climate change.

As a scientist from the Bahamas, one of the low-lying coastal countries that are at high risk from climate change, I hope that this report provides an impetus for policymakers to limit warming to 1.5 °C, urgently ramp up adaptation and address loss and damage.



Can artificially altered clouds save the Great Barrier Reef?

Edwin Castellanos, director of the Sustainable Economic Observatory at the University of the Valley of Guatemala in Guatemala City. This report combines two messages, one of urgency and one of hope: urgency to act, not only to drastically reduce emissions in the near term, but to increase our actions to adapt to the impacts already observed and to come. And there is hope from knowing that we are still in time to take these actions.

My hope is that this report will highlight the need for developed countries to support developing countries, particularly with financial resources to reduce the vulnerability of people, particularly those at higher risk: the poor, the marginalized and Indigenous peoples.

Sarah Cooley, director of climate science at the Ocean Conservancy, a conservation group based in Washington DC. This report assesses how local communities are rising to the challenge of climate change and have become leaders on climate adaptation and climate planning. It evaluates the climate adaptations that communities have already tried, and it identifies the features of successful, equitable activities, as well as opportunities for even bigger changes.

It also confirms that any more delay in climate action is going to close off opportunities to head off the worst impacts of climate. But the good news is, there are more details than ever about how the global community can meet the challenge effectively, despite our slow start.

Ibidun Adelekan, a geographer at the University of Ibadan in Nigeria. The report underscores the fact that the capacity of individuals and local communities to cope and adapt to the risks from climate change is very limited without adaptation-planning efforts supported by governments. There is need for collaboration among citizens, scientists, the private sector and policymakers to develop feasible adaptation plans, through the integration of different knowledge systems — including local and Indigenous knowledge.

Rawshan Ara Begum, an economist from Bangladesh who studies sustainable development at Macquarie University in Sydney, Australia. This report provides a range of climate-adaptation options for reducing vulnerability and enhancing resilience. As a citizen of a vulnerable country, I have hopes that global leaders will take urgent,

accelerated action to adapt to climate change, while making rapid, deep cuts in greenhouse-gas emissions.

Bangladesh is one of the most vulnerable countries in the world, owing to climate change and sea-level rise. This will further worsen the country's current challenges, including extreme poverty, income inequality, economic and non-economic losses and damages, and low adaptive capacity. Urgent and accelerated action is required.

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Quotes from the report authors have been edited for length and clarity.
