

'We need to do all we can': Five key takeaways from the UN climate report

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In the latest United Nations report on climate change, scientists document the stark toll inflicted by global warming through more intense heat waves, droughts, floods and other disasters, and present a dire

warning that humanity should act quickly to move away from fossil fuels and cut planet-heating emissions.

The report goes beyond past assessments not only by detailing the latest science but also by focusing on how the world, while reducing emissions, can better adapt to the accelerating effects of climate change to reduce risks and protect especially [vulnerable people](#).

The report by the Intergovernmental Panel on Climate Change, or IPCC, stresses that the threats to people's health, livelihoods and lives disproportionately affect those who lack resources to weather the blows. In pursuing climate solutions, the report's authors say, there should be a focus on equity and justice, because the effects are exacerbating inequality and hitting especially hard for low-income people, marginalized communities and developing countries.

The scientists also warn that the [natural world](#), from coral reefs to mountain forests, faces grave threats, but that nature can help in various ways when people design solutions around ecosystems.

Researchers and experts who focus on climate solutions said the IPCC report raises the profile of approaches that hold promise for addressing the crisis at the local level, the national level and around the world. Here are several key takeaways from the report:

1. A focus on protecting vulnerable people

The scientists say efforts to combat climate change and reduce the risks should involve everyone, including governments, businesses and citizens. And because some people are suffering disproportionately, they wrote, "equity and justice" are vital in decision-making and investment.

"Responses to climate change have to be based on equity and justice to

really make a sustainable future for all," said IPCC Vice Chair Roberto Sánchez-Rodríguez, a professor of environmental studies at Mexico's Colegio de la Frontera Norte and an emeritus professor at UC Riverside. He said climate change has become "an aggravating factor to already existing development gaps and unfair conditions around the world."

The report discusses how poverty and the lack of basic infrastructure compound the problems of a warming world for many around the globe. It says an estimated 4 billion people, approximately half the world's population, already experience severe water scarcity for at least one month a year. Expanding regions of the world are projected to face worsening [water stress](#), and warming is bringing deadlier, more destructive storms and flooding.

Although developing countries are especially threatened, Sánchez-Rodríguez said, low-income communities are also vulnerable within wealthy countries such as the United States.

In California, for example, farmworkers are among those who now cope with more [extreme heat](#) while working in the fields.

"If we want to have effective climate change policy, we have to look at those human dimensions, and particularly those equity dimensions, and protecting some of the most vulnerable populations," said Michael Méndez, an assistant professor of environmental policy and planning at UC Irvine, who said he was pleased to see the report's stronger focus on equity and environmental justice.

Extreme heat has killed an estimated 3,900 people in California over the last decade, according to an L.A. Times investigation.

One bill that was recently introduced in the California Legislature aims to reduce the dangers of extreme heat by establishing a ranking system

for heat waves and creating an early-warning system. Méndez said he thinks this would be a significant step in helping communities be better prepared by understanding how severe an impending heat wave will be.

Beyond such legislation, Méndez said, "you need to involve the community, those that are first and hardest hit," in making decisions about policies and implementing solutions. He said this shift, which is needed in California and elsewhere, involves developing solutions with a "strong equity lens."

2. An urgent call for action—and every fraction of a degree matters

With the increase in average temperatures of about 1.1 degrees Celsius (2 degrees Fahrenheit) so far, "we are seeing widespread negative impacts on people and ecosystems," said Diana Liverman, a professor of geography and development at the University of Arizona who was a review editor for a chapter in the report.

"We need to do all we can to reduce emissions so we avoid higher-end warming or tipping points that would have serious impacts," Liverman said.

The scientists called for governments, businesses and individuals to take rapid steps to meet the goal of limiting warming to 1.5 degrees Celsius (2.7 degrees Fahrenheit) above preindustrial levels, which they said would substantially reduce the toll for humans and ecosystems. They said exceeding that amount of warming, which appears likely on the current trajectory, would have devastating effects, from harming food production to further intensifying wildfires.

The scientists emphasized that each fraction of a degree matters, and

will bring greater risks for people and ecosystems worldwide.

Ani Dasgupta, president and chief executive of the nonprofit World Resources Institute, said the report shows "we still have a narrow pathway to avoid the very worst climate impacts," and that it's urgent for the world's heaviest emitters, including the U.S. and other wealthy G20 countries, to rapidly cut emissions. These countries should also scale up international funding, he said, to help vulnerable countries deal with unavoidable losses and damages.

U.N. officials called for scaling up international funding for adaptation efforts, focusing on aims such as reducing flood risks, improving access to [clean water](#) and improving health systems to deal with extreme heat waves.

John Matthews, executive director of the Alliance for Global Water Adaptation, said the IPCC's embrace of water-related adaptation efforts in the report represents a big shift. Matthews said the work of adaptation should be scaled up at all levels, recognizing that all citizens can be involved in developing solutions and preparing for where the climate is headed.

"It's going faster than anybody thought that it would," Matthews said. "And we have to make decisions right now. It's really time to start owning this as a problem. The IPCC is not going to save us."

"It's not a scientific problem anymore," Matthews added. "Climate change, it's a daily decision-making problem, it's an investment problem, it's a water problem, it's a city problem. ... We need to be the problem-solvers."

3. Swift cuts in emissions would prevent the worst

effects

The report shows the world needs to act urgently to curb the use of fossil fuels, and it's not too late to prevent the worst effects, said Michael Mann, director of the Earth System Science Center at Penn State University.

Mann has cited research that was included in an IPCC report last year indicating that if humanity were to cut emissions to zero, temperatures would quickly stop rising.

"Carbon dioxide levels actually start coming down once you stop emitting carbon into the atmosphere," Mann said in a press briefing ahead of the latest report's release. "And that's because natural sinks, particularly the ocean, continue to take carbon out of the atmosphere."

He said the science "tells us that surface warming stabilizes quickly when emissions go to zero," and many of the effects, such as wildfires and floods, would likely stabilize.

"That still implies a 'new normal' of heightened wildfire and flood risk we must adapt to," Mann said. The melting of polar ice sheets and sea-level rise will also continue to worsen, he said, and adapting will require far greater efforts, in many areas ultimately retreating from the encroaching seas.

Opportunities abound to quickly move away from fossil fuels, Mann said.

"We have the technology now to decarbonize the vast majority of the power and transportation sectors," he said. "The obstacles at this point are not technological. They are political."

4. Water-related risks are growing

Research shows that as the planet gets warmer, the water cycle is changing. Droughts and floods are becoming more extreme and are projected to keep intensifying as temperatures rise.

Since the 1950s, the IPCC report says, approximately 700 million people around the world are experiencing longer dry spells. About 7% of all disasters worldwide between 1970 and 2019 have been drought-related, but the droughts account for 34% of disaster-related deaths, mostly in Africa.

In many food-producing regions, groundwater levels have declined as wells have drawn heavily on aquifers.

The report says water-related risks are set to increase with each additional degree of warming.

Researchers have found that western North America, from Montana to northern Mexico, has just had its driest 22-year period in more than 1,200 years.

In the southwestern U.S. and northern Mexico, many studies show that droughts are getting longer and more intense, Sánchez-Rodríguez said. "It's increasing temperature and increasing drought. So the scenario is really dramatic for this part of the world."

The scientists identify water as a key risk for North America. To deal with worsening water scarcity, Liverman said, the region needs to prioritize "efficiency of water use," water reuse, and collaborative approaches to water management and allocation, as well as "possibly reallocating water from agriculture to urban uses."

Kathy Jacobs, director of the University of Arizona's Center for Climate Adaptation Science and Solutions, said the country needs to be better prepared for the shrinking amounts of runoff feeding streams in the West.

"I'm actually extremely concerned about availability of water for habitat, particularly in the Southwest, where a lot of the biodiversity is linked to riparian areas," Jacobs said. "There's no doubt that what's left of flowing streams in riparian areas are in grave danger, and that means that biodiversity in the Southwest is in some trouble."

5. Nature can be harnessed for solutions

The report says safeguarding nature should be a vital part of addressing [climate change](#). Restoring degraded ecosystems and conserving 30% to 50% of the Earth's lands and waters would boost nature's ability to absorb and store carbon, the scientists said, while also helping ensure water supplies.

They said adaptation efforts designed around ecosystems can help reduce risks for people and biodiversity. For example, along rivers, healthy upstream forests, floodplains and wetlands reduce flood risk by storing water and slowing the flow.

The researchers said restoring floodplains and wetlands are some of the nature-based solutions that can improve water management. Creating no-build zones can also reduce flood risks by "letting nature take its course," said Debra Roberts, co-chair of the IPCC Working Group II.

"If we bring nature back into the city, protect our floodplains, have trees along our streets, we can do a great deal to increase our adaptive capacity," Roberts said. "There's a real advantage in reconceptualizing our cities, not only as a place of people, but a place of nature."

The scientists said the work of adapting will need to focus on preparing for the effects to grow more severe.

"We need to soften and slow the blows by cutting greenhouse gas emissions. But we also need to cushion the blows by picking up our efforts to adapt," said Inger Andersen, executive director of the U.N. Environment Program. She called for dedicating more funding to nature-centered adaptation programs.

"We need to protect and restore wetlands for nature and incorporate wetlands in our cities," Andersen said. "Humanity has spent centuries treating nature like its worst enemy. The truth is that nature can be our savior. But only if we save it first."

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