

Syria after the earthquakes: how researchers can help

The earthquakes have amplified a lengthy humanitarian catastrophe for 4.7 million people. Expertise and donations can help.

It's been three weeks since southern Turkey and northwest Syria were devastated by earthquakes, starting on 6 February. More than 50,000 people have died, 70,000 are injured and at least 160,000 buildings have totally or partially collapsed.

United Nations organizations and other aid agencies have joined thousands of volunteers in both countries. The World Food Programme is delivering millions of hot meals. The World Health Organization (WHO) is supplying hospitals with painkillers and antibiotics. The World Bank has pledged nearly US\$1.8 billion for recovery and reconstruction, and UN secretary-general António Guterres is appealing for \$1 billion for Turkey and close to \$400 million for Syria, to be distributed to organizations providing food, shelter and education. Separately, the Red Cross/Red Crescent has launched an appeal to raise around \$700 million.

Turkey's government has pledged to rebuild homes within a year. But there's no such help (and much less other assistance) across the border in northwest Syria, where the earthquake killed more than 4,500 people, injured 8,500, demolished around 10,000 buildings and left some 11,000 people homeless. Northwest Syria's inhabitants have no unified government. They're trapped in a war, a legacy of a 2011 revolution – part of the Arab Spring – that was suppressed by the government of President Bashar al-Assad in a military operation backed by Russia. The region is also effectively isolated; there are only three (temporary) crossing points for supplies to reach people along Syria's 900-kilometre border with Turkey.

Even before the earthquakes, the UN Office for the Coordination of Humanitarian Affairs estimated that more than half of northwest Syria's 4.7 million people are internally displaced, and around 70% of those are living in temporary accommodation (often in tented cities). More than three million do not have enough to eat and one-third are disabled, many because of the war. Health-care facilities have been targeted, leaving only 66 hospitals still functioning, but poorly equipped, amid an ongoing cholera outbreak.

Nature has spoken to researchers, medical personnel and engineers in the region and internationally. They tell us that northwest Syria urgently needs expertise and specialized equipment, in addition to funding. For example, volunteer engineers are going house-to-house tapping walls with hammers to gauge whether a building is inhabitable.

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The WHO estimates that between them, the region's hospitals have 64 X-ray machines and 73 renal dialysis machines, 7 computerized tomography (CT) scanners and one magnetic resonance imaging (MRI) machine. But researchers have told *Nature* that access to spare parts and expert technical support is as important as the machinery itself to keep things functioning.

There are research projects studying the situation. One is the UK-funded Research for Health Systems Strengthening in Syria, which is investigating how health care is being affected by war, and determining what more-sustainable models of governance and financing could look like, says co-investigator Abdulkarim Ekzayez, an epidemiologist at King's College London.

Members of the international research community can also join broader efforts to alleviate the situation. They can donate funds – for example, by responding to international appeals or giving to the organizations listed at go.nature.com/3kq2rpn. They can urge their lawmakers to call for crossing points into northwest Syria to remain open long after emergency humanitarian assistance ends – two of the three are due to close in May, the third in July. If that happens, the region's people will be cut off.

Researchers can urge the WHO to prioritize the region's health needs. The agency is trusted and, through director-general Tedros Adhanom Ghebreyesus, it could do more to use that status to urge all the power brokers on the ground to allow it to work with other experts to deliver both immediate and longer-term help, including much-needed assistance to rebuild homes and health systems.

This tragedy has opened a rare window to provide more international support for people who have been neglected for much too long. Researchers can help to keep that window open.

Will the world ever see another IPCC-style body?

Many have sought to copy the IPCC. A new book explains why the panel's all-encompassing scientific assessments are hard to replicate.

When it comes to getting decision makers to pay attention to scientific evidence, there are few better – or perhaps better-known – examples than the Intergovernmental Panel on Climate Change (IPCC). Its summary reports on climate science, impacts and adaptations are read by a wide range of people, in bodies as disparate as companies and campaign groups, as well as, of course, their primary audience: decision makers. Produced every

six or seven years, the main IPCC studies have an extraordinary reach, informing everything from global climate agreements, such as that negotiated in Paris in 2015, to the school climate-strikes movement Fridays for Future.

This is no small achievement for what is, at its core, a network of hundreds of researchers working in the early or late hours for no payment. They read and summarize thousands of research papers to answer questions such as how much the planet has warmed; what the future projections are for Earth's climate; what the impacts of warming are; how to mitigate climate change; and how the world can better prepare for a warmer future.

A similar but less well-known IPCC-style network of researchers is the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). Established in 2012, its studies helped to underpin the Kunming–Montreal Global Biodiversity Framework, which aims to stem our destruction of nature and was signed in December last year. But when it comes to other great global challenges, which are embodied by the United Nations Sustainable Development Goals – inequality, say, or water or food security – there's no advisory research body on a similar scale or with comparable impact, and none on the immediate horizon. And this is not for want of trying. So why has the model proved so difficult to replicate?

Product of its time

A new book that takes an in-depth look at the IPCC helps to explain why the climate panel and IPBES remain two of a kind – and why we might not see their like again. *A Critical Assessment of the Intergovernmental Panel on Climate Change*, published in December 2022 and edited by political scientist Kari De Pryck at the University of Geneva in Switzerland and human geographer Mike Hulme at the University of Cambridge, UK, was written collaboratively with 33 other social scientists. It includes chapters on the IPCC's formation and governance, who participates in it and what its future might be: an IPCC-style assessment of the IPCC itself. The authors describe an organization that was a product of a particular set of circumstances, some of which cannot be recreated easily – if at all.

Although the IPCC was established in 1988, the seeds had been sown several decades earlier by researchers who were becoming concerned about the implications of putting vast amounts of carbon into the atmosphere. A series of climate research programmes and conferences were co-organized by the World Meteorological Organization, the International Council of Scientific Unions and the UN. By the late 1970s, studies were starting to accumulate describing projected warming due to atmospheric levels of carbon dioxide and other greenhouse gases.

Those who would eventually establish the IPCC realized that the findings of such studies could not just be one-offs, and that periodic assessments were needed to keep a closer eye on how the climate was changing. These studies needed to include the science of greenhouse-gas emissions; the nature and composition of greenhouse gases; and the all-important question of the extent to which human activities (particularly the burning of fossil fuels) were

responsible for climate change. The last of these was not settled until the mid-1990s, and was reported in the IPCC's second assessment report in 1995, with the now-famous phrase “the balance of evidence suggests that there is a discernible human influence on global climate”.

The novelty of the IPCC approach is that researchers employed by participating governments are among the members of the teams reviewing the literature. Scientists representing governments sign off the ‘summary for policymakers’, which synthesizes the research into a booklet using language that can be understood by non-experts.

The IPCC's founding researchers considered government involvement to be essential to both attracting decision makers' attention to the body's findings and gaining their trust. But there are good reasons that other research networks cannot replicate this level of involvement.

Scientists working for governments were among the founders of the IPCC because they were already involved in climate science. These were the employees of official weather-data centres, or meteorological offices. They were among the first researchers to have access to the kind of computing power needed for climate simulation studies – which governments tended to have. This meant that it wasn't much of a stretch to include more of them on assessment teams working with researchers at universities.

Many of these government scientists also had strong links to departments for defence – for which accurate weather forecasting is a must – and, through that, had access to some of the most senior people in government. In the United Kingdom, for example, the IPCC's first assessment report (in 1990) was presented in a special seminar to then-prime minister Margaret Thatcher.

Other scientific networks do not have the same degree of access. Even if they did, such involvement would be more complicated to navigate now than in the 1980s. The book's authors detail how, over time, IPCC meetings became more politicized as government representatives – mainly, but not exclusively, from oil-producing states – interfered in the scientists' discussions.

The IPCC's creation was an inventive response by researchers to the challenge of communicating climate science to decision makers. It has brought knowledge of the latest climate science to millions of people. Its reports confirmed a human fingerprint in global warming and, in that regard, have been pivotal to the creation of international climate agreements. From early on, scientists from low- and middle-income countries were invited to join the leadership of the IPCC's writing groups, an unusual move for its time. Nonetheless, the IPCC has struggled to properly represent female researchers, scientists from lower- and middle-income countries, and Indigenous people.

Today's myriad global challenges need research-based evidence more than ever, and it's clear that faster, more focused and more inclusive assessments – such as those that the IPCC and IPBES are starting to do – are the way forward. The world might never again see a research assessment on the scale that the IPCC pioneered, but that is far from the only way for policymakers to access – and act on – scientific evidence.



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