

The scientific panel on biodiversity needs a bigger role

IPBES, the international panel of leading biodiversity researchers, should be consulted on how best to measure species loss.

For more than 30 years, the international community has tried and failed to find a path to slow down – and eventually reverse – worldwide declines in the richness of plant and animal species. Next year, it will have another chance. The 15th Conference of the Parties (COP 15) to the United Nations Convention on Biological Diversity, recently delayed for the third time, is now slated to take place in person in Kunming, China, in April and May 2022.

Biodiversity is fundamental to Earth's life-support systems, and humans depend on the services that nature provides. In 2010, countries committed to slowing the overall rate of biodiversity loss by 2020. But just 6 out of the 20 targets that were agreed on that occasion – at COP 10 in Aichi, Japan – have been even partially met, notable among them a commitment to conserve 17% of the world's land and inland waters.

Ahead of the Kunming meeting, policymakers and scientists are discussing a new action plan, called the Global Biodiversity Framework, which they hope to agree next year. The latest draft (published in July; see go.nature.com/3kbvspd) includes a promise to conserve 30% of the world's land and sea areas by 2030 and reiterates the need to meet earlier targets, including the provision of greater financial support to low-income countries to help them to protect their biodiversity.

Missing link

Researchers around the world are advising on the plan, through the UN's institutions and through universities and various scientific networks. But one piece of the puzzle is missing. In 2012, a host of governments established the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). It periodically reviews the literature and provides summaries of the latest knowledge. However, the countries organizing the COP are not involving IPBES in the action plan in the way that the UN Intergovernmental Panel on Climate Change has been consulted for advice ahead of climate COPs. It is important that IPBES be asked, because policymakers are being presented with a range of ideas that would benefit from the systematic evaluation that a global scientific advisory body would bring.

For example, biodiversity terminology is often unfamiliar, and therefore challenging, for most policymakers.


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The word itself – defined by the biodiversity convention as the variety and variability of life on Earth, at the level of genes, species and ecosystems – is not commonly used, nor well understood beyond the scientific community. The magnitude of biodiversity's value to the planet and to people, as well as the risks of losing it, are also not widely appreciated.

Over the years, various teams of scientists have researched and offered ideas on how to communicate the state of biodiversity both accurately and in a way that is accessible and engages the wider public. Some are advocating a biodiversity equivalent of the 1.5°C warming target, or of net-zero emissions. One suggestion, published last year, is for the international community to adopt a target for limiting species extinctions. The goal would be to keep extinctions of known species to below 20 per year globally for the next 100 years – a single headline number to represent biodiversity (M. D. A. Rounsevell *et al. Science* **368**, 1193–1195; 2020).

A focus on species extinctions as a proxy for biodiversity is not a new idea, and is controversial. However, the authors say that their intention is not to replace biodiversity's many facets with only one number, but to communicate biodiversity in a way that would resonate with more people.

Another group is proposing a composite index – a single score made up of measures of some of biodiversity's main components, including the health of species and ecosystems, as well as the services that biodiversity provides to people, such as pollination and clean water (C. A. Soto-Navarro *et al. Nature Sustain.* <https://doi.org/gmjs2f>; 2021). This would be biodiversity's equivalent of the UN Human Development Index – first published in 1990 – which amalgamates information on health, education and income into a single number and has been adopted worldwide as a measure of prosperity and well-being.

A third idea, published by the leaders of some of the world's most influential conservation and environmental science organizations, is called Nature Positive (see go.nature.com/2ydk89n). Its authors are proposing that the UN's many global environmental agreements should include three common targets: no net loss of nature from 2020 (meaning that although nature might continue to be degraded in some areas, this would be offset by conservation gains elsewhere); some recovery by 2030; and full recovery by 2050. At present, the UN agreements on biodiversity, stopping climate change and combating desertification all have their own processes, occasionally acting together, but more often operating independently. The goal is to get them to sign up to one set of principles.

All of these ideas have advantages and risks, which is why they need to be systematically evaluated by researchers. That's where IPBES's role is crucial. IPBES comprises a broad community of researchers, and, importantly, it represents voices from under-represented low- and middle-income countries, as well as the world's Indigenous peoples. The governments involved in organizing the Kunming COP should ask IPBES to evaluate the ideas being put forward for the next biodiversity action plan, so they can be confident that what they decide has the support

of a consensus of researchers, particularly in more-biodiverse regions of the world. Although preparations for the Kunming COP are well under way, this could also happen after the COP.

Biodiversity loss could be as serious for the planet – and for humanity – as climate change. World leaders have become skilled at organizing complex international meetings and making promises that they then fail to keep. The upcoming biodiversity COP risks being one more such event, which is why researchers offering solutions are right to feel frustrated. They should work with IPBES to review their ideas. A unified voice is powerful, and if scientists can present a united front, policymakers will have fewer excuses to continue with business as usual.

Don't abandon Afghanistan

How the international research community can help Afghanistan's scholars.

The situation in Afghanistan is horrifying. We need immediate assistance.”

This is one of several distressing messages sent to *Nature* by researchers in Afghanistan, following the Taliban's capture of Kabul on 15 August and the evacuation of US military forces on 31 August. Researchers are among those who are now especially vulnerable. The United States has been their main source of funding and collaborations, and that puts them at increased risk of persecution by the new rulers. Most institutions remain closed, and many staff and students – women and men – are in hiding.

For now, the Taliban has announced an amnesty, and is urging Afghanistan's professionals to stay in the country and continue to go to work. But researchers interviewed by *Nature* are not taking any risks. Many remember the Taliban's previous rule (1996–2001), and the systematic human-rights violations, particularly against girls, women and minority communities.

Since 2002, Afghanistan has witnessed a knowledge and information boom. New universities have been established, together with some 200 television channels and 1,900 media outlets, according to the United Nations cultural organization UNESCO. The student population has ballooned from 8,000 to 170,000, one-quarter of whom are women. Afghanistan's Academy of Sciences has grown to employ more than 300 people, and its projects include research to create dictionaries in the approximately 40 languages that are spoken in the country. International collaborations have been set up. For example, Kabul University has been working with the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy, to revamp undergraduate physics teaching in Afghanistan.

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Since the Taliban's takeover, organizations that help refugee scholars, such as Scholars at Risk, based in New York City, have been calling on universities in various countries to accept faculty members and students who are able to leave. Afghanistan's neighbouring countries in south and central Asia – especially those that have provided higher education for previous generations of Afghanistan's refugee scholars – should also provide support for researchers and students who need it.

But, in a country of 38 million people, most of Afghanistan's researchers will probably be staying. And they, too, need the international research community's support. This will be harder to give. But there are ways in which it can be done, for example by organizing research opportunities in 'neutral' countries – those that are not party to a conflict.

The Jordan-based synchrotron radiation source, SESAME, is an example of one such opportunity. It is designed explicitly to support researchers in countries that have difficult international relations. Although many years in the making, the pay-off has been worth the effort – its participants include Cyprus and Turkey, as well as Iran and Israel. Afghanistan's researchers should now be invited.

During the cold war, the International Institute for Applied Systems Analysis, based near Vienna, was established in 1972 as somewhere that scientists from East and West could collaborate on interdisciplinary global challenges in a neutral country. Both the Soviet Union and the United States were among the founding partners.

The situation in Iran shows what could happen under the alternative scenario – enforcing a policy of isolation. During Iran's Islamic revolution in 1979, a US-backed monarchy was overthrown in a cleric-led takeover. Many of Iran's former Western allies cut off all but basic consular links. Over time, Iran's rulers have become increasingly repressive. This has hit academic communities hard: scientists with global links are arrested, imprisoned and seen as a security threat, as *Nature* and other publications have reported.

That, in turn, has fuelled a brain drain. Researchers at Stanford University in California have estimated that 3 million people – around 4% of the population – had left the country by 2019, and more continue to do so. This compares with half a million who left before 1979 (P. Azadi *et al. Working Pap. 9; Migration and Brain Drain from Iran, Stanford Univ., 2020*). The evidence is clear: Afghanistan's new rulers and the outside world would be unwise if they pressed replay on the Iranian tape.

This means that, to continue supporting Afghanistan's researchers, countries will need to maintain some minimal lines of communication with the new rulers. This will not be easy, and it will need the Taliban to honour its pledge that people who receive US or European funding, or who work with international organizations, will not be persecuted.

Researchers at risk must be able to leave and to resume their lives in countries that can provide them with safety and security. But, at the same time, research leaders in Afghanistan's neighbouring countries – and those farther afield – must work strenuously to support those Afghans who are staying, and who must not be forgotten or neglected.