

Global science must not be treated as a diplomatic pawn

Science is too often used as leverage in international politics. Researchers must protect the networks needed for science-based treaties to succeed.

Judging by some of this month's headlines, it might seem as though we are living in a new golden age for science cooperation. Last week, the European Commission confirmed that work is under way on a 'science diplomacy' strategy, to be finalized next year. The US National Academy of Sciences and the Polish Academy of Sciences have teamed up to provide more funding support to researchers from Ukraine. On 13 December, representatives of the United States and several African countries committed to expanding cooperation in space science; and the United States is also keen to invest in electric-vehicle battery manufacturing in Africa.

Cooperation on space, nuclear energy and meteorology was also on the agenda during the landmark visit by China's president, Xi Jinping, to Saudi Arabia in early December. And, just this week, the Fifteenth Conference of the Parties to the United Nations Convention on Biodiversity (COP15) concluded in Montreal, Canada, with an agreement on a new blueprint to halt and eventually reverse the decline of species and the degradation of ecosystems.

International cooperation in science tends to take the form of projects and programmes initiated and led by researchers at universities or scientific academies, or those working in industry or at autonomous science-funding agencies. Projects such as CERN, Europe's particle-physics laboratory, and the James Webb Space Telescope are exemplars. But most of the latest announcements are part of a different trend that seems likely to continue in 2023 and beyond: that of individual countries and regions using scientific cooperation to further their geopolitical or geostrategic objectives. This is not without risk.

Science has always been a tool in international relations. But hard-nosed political initiatives must not be allowed to crowd out the kind of 'no strings' cooperation that leads to discovery and invention, and that is needed to solve global challenges such as biodiversity loss or pandemic prevention. Against a backdrop of increasing tensions between China and the United States and the continuing fallout from Russia's invasion of Ukraine, there's a real danger of science getting trapped in political projects. Researchers need to be vigilant, recognize the risks and stand firm when necessary.

Overall, the past year has been a mixed bag for cooperation towards common global goals. The deal reached at COP15 was a high point, although the devil there will



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be in both the detail and the implementation. The COP27 climate summit held in Sharm El-Sheikh, Egypt, in November brought some movement on the crucial sticking point of 'loss and damage' finance transfers from higher- to lower-income countries, although little further progress on decarbonization.

But the COVID-19 pandemic continued to provide textbook examples of nations working in their own interests. The governments of a relatively small number of wealthy countries had already bought and hoarded vaccines from pharmaceutical companies in Europe and the United States (*Nature* 607, 211–212; 2022). Together, these countries opposed an international campaign (in which *Nature* was proud to play a small part) urging the sharing of vaccines, therapies and intellectual property. Had they heeded the words of World Health Organization chief Tedros Adhanom Ghebreyesus, who repeatedly stressed that “no one is safe until everyone is safe”, more people in low- and lower-middle-income countries could have been vaccinated more quickly, and fewer lives lost.

The invasion of Ukraine, meanwhile, has halted all official research cooperation between Russia and Europe and the United States. This year, Russia held the rotating chair of the Arctic Council, an intergovernmental forum promoting cooperation in the region, but much of the council's work has been suspended because the seven other member countries have stepped back. At the same time, supporting Ukraine's research community has become a priority for Europe and the United States, working with campaign groups such as Scholars at Risk and the Council for At-Risk Academics.

By contrast, many non-Western nations have not been isolating Russia. China, India and South Africa are continuing their research cooperation with Russia, as we reported in April (*Nature* 604, 227–228; 2022). Russia shares the vice-presidency of the Alliance of International Science Organizations, the science-cooperation arm of China's Belt and Road Initiative. China has invested more than



Tedros Adhanom Ghebreyesus is chief of the World Health Organization.

US\$900 billion since 2013 in this initiative, which aims to build infrastructure in other countries, many of them along the route of the original Silk Road towards the West.

Cooling between China and the United States

Next year is likely to see further reductions in US–China scientific collaboration after two decades of growth in science and technology collaborations. Tensions have been ratcheting up on both sides for a while. In 2018, the administration of former US president Donald Trump launched its ‘China Initiative’, a poorly thought-through surveillance programme to counter what the government regarded as intellectual-property theft and economic espionage. This led to the investigation of many researchers from China or with Chinese heritage and resulted in completely innocent people being arrested and brought to trial. The initiative ended in February, but by then the damage had been done.

Two years ago, China’s government ended incentives for its researchers to publish in international journals. It’s in no one’s interests if China’s researchers become more isolated from their international counterparts (*Nature* 579, 8; 2020). Sadly, this is starting to happen. In 2021, the number of co-authored papers between researchers in the United States and China fell for the first time in 20 years (C. S. Wagner and X. Cai Preprint at <https://arxiv.org/abs/2202.00453>; 2022). There has been a drop in the number of authors reporting dual US and China affiliations on their research papers, too.

Rivalry between the two countries is also being played out in trade and technology, with the era in which powerful countries encouraged open markets looking to be at a turning point. The United States is restricting sales by US companies (and non-US companies that use US technology) to

China of the types of microchip that are used in artificial intelligence and supercomputing. It has placed restrictions on US citizens and residents working for Chinese technology companies. It also wants countries to partner with itself instead of China, which partly explains its interest in encouraging African countries to become an alternative base for technology cooperation. Last week, China retaliated by lodging a dispute with the World Trade Organization, the body that sets rules for international trade, arguing that the US move is a violation of free-trade rules that both countries have signed up to.

Multilateral talks still (just) on track

So far, China–US tensions and Russia’s isolation have not had a discernible effect on major networks of researchers such as the Intergovernmental Panel on Climate Change and its biodiversity counterpart, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Countries are working to stop these tensions interfering with ongoing talks to agree new treaties on preventing pandemics and ending plastics pollution.

Although in the summer China temporarily broke off bilateral climate talks with the United States that had been announced at the COP26 climate summit in Glasgow, UK, at the end of 2021, these talks are now back on, mainly thanks to long-standing relationships between China’s chief climate negotiator, Xie Zhenhua, and top US officials such as climate envoy John Kerry and physicist John Holdren. Tensions have also been high between China and Canada over the past few years, but policymakers and researchers from the two countries worked constructively at the COP15 biodiversity summit, which was led by China.

What will 2023 bring?

The world is clearly in what economist Pedro Conceição calls “a new uncertainty complex”, with an ongoing pandemic, war, climate risks and associated economic shocks. As a result, we are likely to see more instances of countries raising trade barriers and making moves to protect their economies, and more instances of nations using science and technology towards foreign-policy objectives.

That said, governments must accept that they have responsibilities to ensure the integrity of international cooperation in science-based policymaking. In the case of climate change, that responsibility now falls to the United Arab Emirates, which will take over the presidency of the next climate summit, COP28.

There’s little doubt that 2023 will bring more pressure on international cooperation between scientists and on science-based cooperation to protect the environment and public health. For their part, researchers and their representative organizations need to be more vigilant when this happens, not least because they will be asked to do the heavy lifting. They should take the time to study the impacts of what they might be asked to do. And they should ask themselves whether they want to participate in science aligned with foreign policy if this leads to weakening of the vast cooperative networks that are necessary for both global science and science-based international treaties.

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