# PROTECTING SCIENCE IN TIMES OF CRISIS

How do we stop being reactive, and become more proactive?

## EXECUTIVE SUMMARY

CENTRE FOR SCIENCE FUTURES

International Science Council

**To cite this document:**
Title: *Protecting Science in Times of Crisis*
URL: https://council.science/publications/protecting-science-in-times-of-crisis
Publisher: International Science Council
Date: February 2024

DOI: 10.24948/2024.01

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**Acknowledgments:** The authors thank all members of the review panel who provided feedback and comments that were important for the improvement and finalization of the paper.

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The ISC is a non-governmental organization with a unique global membership that brings together more than 245 international scientific unions and associations, national and regional scientific organizations including academies and research councils, international federations and societies, and young academies and associations.
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The ISC established the Centre for Science Futures in 2023 to improve our understanding of emerging trends in science and research systems and to provide options and tools for impact and action.
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## EXECUTIVE SUMMARY

For more than a century, and increasingly in the past decade, scientists, academics and higher education institutions in crisis have been supported by international scientific organizations, science academies, representative organizations for higher education, UN agencies and non-governmental organizations. Their ability to offer temporary academic positions at universities and colleges, and to extend research grants, offers safety to displaced, refugee and at-risk scholars so that their research efforts are not lost, and they can keep working until conditions improve and they are able to return home.

This important collective activity has saved lives, protected families and sustained research efforts to fruition. However, as the range of crises facing the world proliferates, so do the numbers of people at risk, among them scientists and academics. Wars and disasters also have a severe impact on academic and scientific institutions, and on research infrastructure, libraries and data centres.

There is currently no shared understanding of how the global scientific community can respond to crises that affect science and scientists, or of how it can coordinate the rebuilding of science systems affected by crisis. The global scientific community must move from merely reacting to crisis and become proactive in protecting scientists and research in an epoch of polycrisis. We must identify the gaps in current support mechanisms and develop new and more encompassing ways to protect scientists and research in times of crisis.

In this paper, we take stock of what we have learned in recent years from our collective efforts to protect scientists and scientific institutions during times of crisis. It expands our understanding of how the scientific community can prepare for, respond to and rebuild from crises, with the aim of protecting and promoting scientific knowledge as well as scientists and their contributions to society.

### METHODOLOGY

The paper looks at lessons learned from the advocacy and solidarity efforts of the International Science Council and its partners. It uses relevant examples and a policy review to examine the scientific community's response to crises affecting science systems including scientists and scientific research, research objects, scientific infrastructures and archives. These findings are supplemented by insights from comparable sectors, culture and heritage, and from experts involved in crisis from disaster risk reduction, humanitarian and international development perspectives. As a working paper, it provides insights intended to help shape future consultations within global and national science systems on how to act on the UNESCO 2017 Recommendation on Science and Scientific Researchers. It suggests ways forward by which the International Science Council and its partners could consider how best to take this work further.

### INTERNATIONAL POLICY FRAMEWORKS

There are currently no comprehensive or dedicated policy frameworks to guide the science sector through the complexities of protecting scientists, scientific research, science

institutions and science infrastructure during crises. International policy documents call for states to develop policies for the protection of scientific infrastructures and to protect scientific researchers (examples are listed in Table 2). But what these policies should look like, what they should cover and how they could facilitate international cooperation and solidarity for affected communities, is not addressed.

However, there exists a large body of legal instruments and regulations in other sectors that offer a strong foundation for the support of science in times of crisis. Such policies offer inspiration for legal and regulatory instruments specifically for the science sector, designed to protect the varied elements of the scientific enterprise for future generations. This may be strategically a good first step in the development of an appropriate international policy framework.

## EXAMPLES

The paper develops seven examples of crises affecting science systems and institutions. The examples can be grouped under some broad categories:

- Violent conflict: (1) Russian invasion of Ukraine (2022–present); (2) Islamic State of Iraq and Syria (ISIS) occupation of Mosul University, Iraq (2014–2017);
- Disasters: (3) Cape Town University library fire, South Africa (2021); (4) Natural Science Museum fire, Brazil (2018); (5) The Fukushima nuclear disaster, Japan (2011);
- Crisis recovery: (6) war in the Balkans (1991–1999); (7) Japan after World War Two (1945).

The examples can be found in dedicated annexes.

## KEY FINDINGS AND SUGGESTED WAYS FORWARD

This paper follows the main phases of the humanitarian cycle: prevention and preparation, protection, and rebuilding. This three-phase approach allows for more systematic, predictable, efficient and coordinated approaches involving actors across science, higher education, government and civil society, and the UN system.


**1. Prevent and prepare**

The science sector must be made more resilient by developing more predictable, systemic responses that draw upon the expertise of the global scientific community, and which connect scientists, administrators and risk professionals. A focus on crisis prevention and preparedness is needed to minimize crisis-related impacts on the science sector. The sector itself needs to take greater responsibility for its internal risk assessment and mitigation, and for capacity strengthening where needed. Opportunities to make science systems more resilient are lost. Only when they are considered globally and holistically do the costs become clear.

The scientific community is losing research capacity and investment as growing numbers of professional scientists are displaced and science infrastructures are destroyed.

A trustful relationship between science and society at large is critical for the survival of both. Policies and actions that enhance public trust and state support for science are needed. They should be based on shared principles which guide global and equitable scientific responses to crises that affect science.

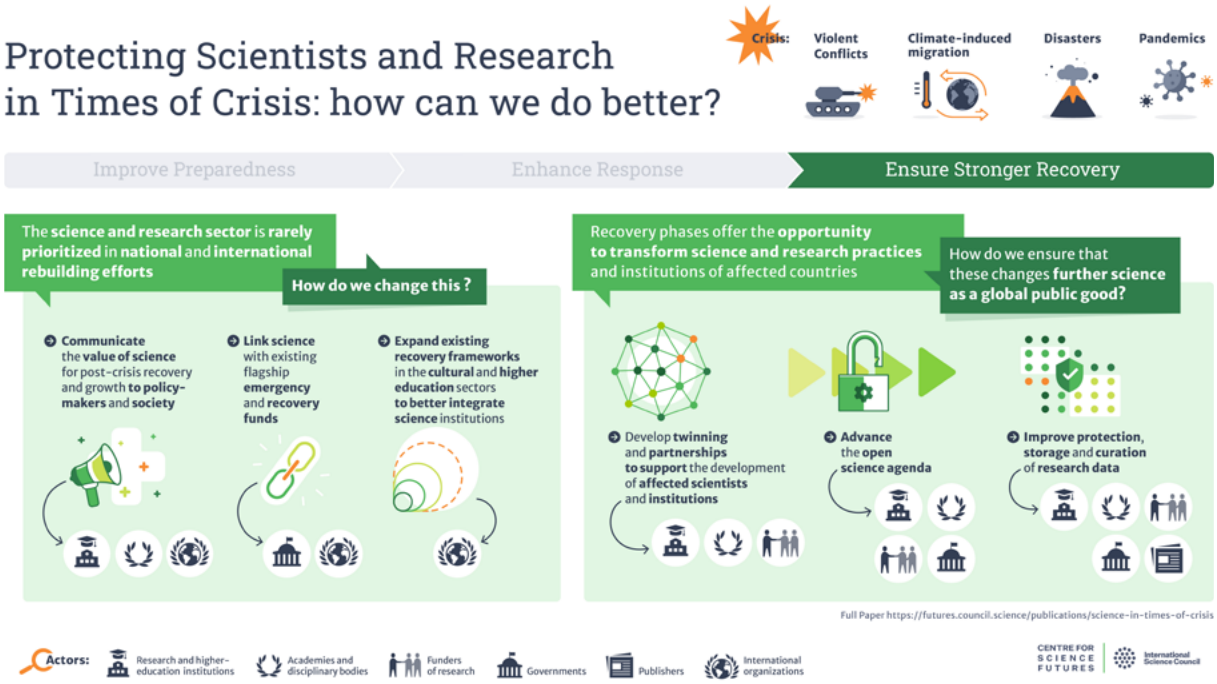
In order to develop consistent and effective responses at each crisis stage, it is essential to build the capacity of scientists and leaders in crisis and risk management, to get more resources for prevention and to help develop action frameworks with partner sectors.


**2. Protect**

In protect, the crisis response phase, science tends to fall through the cracks. The result is a lack of information about the affected scientists, their needs and even their whereabouts. This knowledge gap damages the effectiveness of coordination mechanisms, and the sector's wider understanding of crisis response. Despite the best efforts of dedicated 'science humanitarians', the response of organized science to an emerging crisis is often ad hoc, reactive and limited rather than there being clarity of sector-wide roles and responsibilities.

There is a need for more programmes and funding that enable scholars to continue with teaching, research and publication, and that support 'brain circulation' rather than brain drain. This might involve support for digitization, mobilization of the scientific diaspora, innovative approaches to scientific exchange and collaboration, participation in conferences and financial support.

International scientific institutions, including universities, funders, governments, academies, foundations and disciplinary unions, are often best placed to address these needs and protect key scientific assets. Yet the longer that human and material needs go unmet, for example with scientists out of work, the likelier it is that key competences and knowledge will be lost. Ways forward include improving mechanisms for coordination and information sharing amongst local and international science actors; working with the humanitarian sector to develop more flexible emergency funding mechanisms to fill the gap when science budgets are diverted to defence or other emergency priorities; and developing action frameworks with key elements of the science sector – such as publishing – to improve access to science resources when they are most needed.




### 3. Rebuild

There is clear potential for science and research institutions to play an important role in the post-crisis phase. Here, the science and research sector are rarely treated as a priority in the rebuilding efforts of national and international authorities. However, science, higher education and technological innovation are critical elements of post-crisis recovery. Leaders of the science sector must utilize advocacy, diplomacy and modern communication tools to enhance public understanding of the value of science for recovery and rebuilding, and to influence policy response to ensure that science is on the recovery and rebuilding agenda.

By being integrated more proactively into the broader response to crises, science can add value to crisis recovery and make a strong case to governments and funders to prioritize science in the reconstruction phase. This will involve building stronger collaboration between local and international science actors and with the UN and development sectors. Here we see the potential for real transformation and reform. It will involve incentivizing and enabling collaboration between local and international science actors, insisting on standards that cultivate mutual trust and respect, and making use of today's drivers of change, such as long-term international scientific partnerships, young academies, the science diaspora and competitive funding processes with independent evaluation. Ways forward include developing joint action frameworks with the development sector, making 'open science' more of a reality during crisis recovery, and supporting inclusive approaches to the rebuilding of the affected science system in a way that respects local ownership and incentivizes the return of the displaced.

## CONCLUSION

The paper advocates for a more proactive, global and sector-wide approach to building the resilience of the science sector. An encompassing policy and action framework for the science sector such as the one proposed here has potential to realize both monetary and social value for science and wider society during times of crisis.

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