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We Need a U.N. Study of the Effects of Nuclear War

A new United Nations expert study of the effects of nuclear war would spur informed and inclusive global debate on what nuclear war means for people and the planet today

BY [ZIA MIAN](#)



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At the United Nations, an effort is underway in the General Assembly to establish an international panel of scientists to assess, communicate and advance our current knowledge of the effects of nuclear war. The effort would lead to a more fully informed and inclusive global debate on how much and how little everyone—including the nuclear armed states themselves—actually know of the catastrophic large-scale long-term human, environmental, ecological, economic and societal impacts of using nuclear weapons. Ideally, the findings could build a basis for action toward the total elimination of nuclear weapons worldwide and secure a safer future for people and our planet.

Everyone, not just scientists and their respective professional societies, in all nations, including the nuclear-armed states and their allies, should speak in support of this effort to build a shared understanding of the risks posed by nuclear war plans and nuclear deterrence threats.

In September the U.N.'s member states overwhelmingly agreed on the Pact for the Future, which declares: “A nuclear war would visit devastation upon all humankind.” But it has been over 30 years since the last report by the U.N. on this threat, Published in 1988, that report built on earlier U.N. studies initiated in the 1960s and 1970s, and called for a “co-operative, international scientific effort ... to refine present findings and to explore new possibilities” in understanding nuclear war consequences. With the end of the cold war, however, and the waning of nuclear fears, no such effort was undertaken.

The world is very different today. While the global stockpile of nuclear weapons and some national arsenals today are a fraction of what they were in the late 1980s, there are more nuclear-armed states, and more settings for and scales of possible nuclear war. Some arsenals are increasing, all are being modernized, and nuclear threats are being made more frequently. The global human population is 50 percent larger today than in the 1980s, and the world far more interdependent. Global trade and economic crises, climate change, mass migration and COVID all reveal how humanity and nature are now more tightly bound in world-spanning circuits that push up against planetary boundaries.

As I wrote in the October issue of *Reaching Critical Will's First Committee Monitor*, the Princeton Program on Science and Global Security along with others has spent years drawing attention to the need for a new round of governmental and internationally mandated high-level scientific assessments of nuclear war consequences.

In 2020 the U.S. Congress agreed to mandate a National Academies' study on the climatic effects of nuclear war, often known as nuclear winter—the first since the 1980s. The charge was to assess potential climatic and environmental nuclear winter effects, but not those caused by radioactive fallout from nuclear explosions, and their socioeconomic consequences, in the weeks-to-decades after small-scale regional nuclear wars and for large-scale nuclear war involving the U.S. and Russia. The impacts to be studied were to include those on human health, agriculture, terrestrial and marine ecosystems. The report, expected this fall, has not yet been published.

In 2023 the Scientific Advisory Group of the Treaty on the Prohibition of Nuclear Weapons (TPNW) recommended a new U.N. General Assembly–

mandated study on the climatic, environmental, physical and social consequences of nuclear war. The study would also examine “whether and how the interactions of these different physical, environmental and social effects over various timescales might lead to cascading humanitarian consequences.” A resolution, [Nuclear War Effects and Scientific Research](#), calling for such a study was introduced at the U.N. in October by Ireland and New Zealand, and initially co-sponsored by a diverse group of over 20 states (from Latin America, Europe, the Middle East, Africa and Asia), including one NATO member (Norway). More states are expected to add to this number. A [separate 2023 report](#) by the U.S. National Academies of Sciences made evident the need for such assessments. Based on classified briefings and “Secret level” reports, the study concluded that the nuclear war consequence models used by the U.S. Defense Department are so poor as to offer no real basis for policy makers to understand the effects of existing plans for using nuclear weapons.

In that report, the National Academies committee stated that the assessments of the impacts of nuclear weapons use, made by the Defense Threat Reduction Agency for the Defense Department, are “focused on prompt effects and military objectives,” providing only a partial accounting of the consequences. These models “have a large impact on DoD’s strategic thinking on nuclear war”.

It concluded: “There is a need to improve the understanding of the physical effects of nuclear weapons (e.g., fires, damage in modern urban environments, electromagnetic pulse effects, and climatic effects, such as nuclear winter), as well as the assessment and estimation of psychological, societal, and political consequences of nuclear weapons use.” It is hard to imagine a longer list of shortcomings in understanding the effects of using nuclear weapons.

More recently, in April, the national science academies of the G7 countries—Canada, France, Germany, Italy, Japan, the U.K. and the U.S.—issued their first joint statement on nuclear weapons issues. They have been issuing joint statements on various science-related topics since 2005 to advise G7 Summit meetings. The statement on nuclear weapons drew particular attention to the risks and consequences of nuclear weapon use, observing: “A full-scale nuclear war between the nations with the largest arsenals would result in devastation to those nations and would cause harm worldwide.... Depending on the scale of use of nuclear weapons, there is the potential for the destruction of entire ecosystems and extinction of species. In the worst cases this could be on the scale of a mass extinction.”

The statement highlights that the world needs a deeper and more widely shared knowledge of the catastrophic effects of nuclear war on people and planet, and emphasizes that the scientific community has a special role and responsibility both in developing and communicating it.

Despite the consensus among the science academies of the G7 countries, their governments (which currently rely on nuclear weapons use and threat of use as part of their military plans) and some of their allies have not yet publicly indicated their support for the new U.N. resolution calling for a new, up-to-date study of nuclear war effects. The scientific communities and the people who live in these countries should ask why. Are these states fearful that their people will not accept nuclear weapons once they understand how their use may kill and harm countless millions, collapse societies and wreck the planet?

A new U.N.-mandated expert study assessing and addressing the current knowledge of the effects of nuclear war can spur a better-informed, inclusive and much-needed global debate on what nuclear war means for people and the

planet. It would be especially important for people and countries that have not done nuclear war studies of their own, but would be innocent bystanders in any nuclear war. It also would help governments and people in nuclear-armed states better understand the nature, scale and severity of the many catastrophic consequences of nuclear war, not just for adversaries but for everyone, including themselves.

This is an opinion and analysis article, and the views expressed by the author or authors are not necessarily those of Scientific American.

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