

Science Diplomacy and Understanding the Effects of Nuclear War

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Among existential threats such as climate change and pandemics, the prospect of the breakout of a nuclear war has been of particular concern amid the evolving geopolitical scenario. Consequently, understanding the effects of nuclear war on health and environment in particular and the future of humanity in general continues to be an important concern for science diplomacy in the 21st Century. Amid growing hostilities between nuclear-armed states, scientists from all over the globe have called for an improved understanding on the effects of nuclear war. In recent times, this momentum has translated to the UN General Assembly's First Committee on Disarmament and International Security voting for the establishment of an expert panel to broaden the understanding on the subject.

The [resolution](#) titled "Nuclear War Effects and Scientific Research", was sponsored by Ireland and New Zealand. This is the second effort of its kind to draw upon scientific expertise to enhance humanity's understanding on the effects of nuclear war. A 1985 UNGA resolution had called on the UN Secretary-General to conduct a study on the physical and environmental effects of nuclear war. The report that resulted out of this was published in 1988 and significantly helped broaden the understanding on the climactic effects of nuclear war including nuclear winter, "a prolonged cooling effect on the earth". The new resolution calls for the establishment of an independent panel to review existing body of knowledge as well as commission new studies to provide a comprehensive assessment on the poten-

tial effects of nuclear war. More specifically, the panel would [exam-](#)
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"the physical effects and societal consequences of a nuclear war on a local, regional and planetary scale, including, inter alia, the climatic, environmental and radiological effects, and their impacts on public health, global socioeconomic systems, agriculture and ecosystems, in the days, weeks and decades following a nuclear war".

144 UN member-states including several members of the North Atlantic Treaty Organization voted in favour of the resolution. While China remained the sole *de jure* nuclear weapon state to vote in favour, others including the United States, Russia, France and the United Kingdom abstained.

As such the practice of science diplomacy in the post-World War II era have drawn substance from negotiations pertaining to nuclear arms control and non-proliferation. In a way, nuclear diplomacy is a classic case in point to understand [science in diplomacy](#), which focuses on informing and supporting diplomatic processes through lending scientific expertise. Whether it be with respect to nuclear test bans or fissile material cutoff, as well as key matters pertaining to nuclear safety and security, policy has been heavily influenced by science.

Nuclear weapons have only been used twice in history. It was during the final phase of the World War II

that the USA dropped atomic bombs in the Japanese cities of Hiroshima and Nagasaki on 6 August and 9 August 1945 respectively. The two events demonstrated to the world the massive amount of death and destruction that the atomic bomb could unleash. Moreover, the effects of the atomic bomb continues through Japan's post-World War II generations which continue to suffer from severe health impacts.

While a broad consensus exists that the future use of nuclear weapons should be avoided at all costs, fears are rife that geopolitical competition might prompt nuclear-armed states to resort to using them. Although the existing knowledge on the detrimental impacts of nuclear weapons stands on scientific expertise, an enhanced and comprehensive understanding as mandated by the recent resolution would help improve awareness on these effects to the current generations. This would also help bring together and review the vast wealth of existing knowledge on the subject to be compiled in a comprehensive manner. Modern day climactic and scientific modelling tools may also be employed to gain a clearer picture on how such an event could impact a heavily interconnected world. This shall hopefully carry forward in the coming decades to realise a nuclear weapon free world.