



International science and technology conference in preparation for the Ninth Review Conference of the Biological Weapons Convention (BWC)

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Scientific and Technological Developments: Benefits and Risks for the Biological Weapons Convention

Dates

11-12 October 2022

Venue

Manohar Parrikar Institute for Defense Studies and Analysis, New Delhi, India

Background

The Biological Weapons Convention (BWC), the primary multilateral instrument to prevent the malicious use of biological agents and toxins, is at a crucial juncture with its Ninth Review Conference planned for 28 November to 16 December 2022. The Review Conference will assess the status and overall progress made under the Convention and decide on how to further strengthen it in the context of existing and emerging challenges. One of the pivotal issues is how to take into account new and relevant scientific and technological developments in the implementation of the Convention, as required by its Article XII. To this end, the State Parties will further discuss different proposals for establishing a scientific advisory mechanism. Additionally, the S&T relevant discussions at the Review Conference would include the Tianjin Biosecurity Guidelines for the code of conduct of scientists, dual use of research, biorisk assessment and management.

Continuous engagement with academia and industry is essential for the success of the Convention as it helps to improve understanding of the evolving risks and benefits associated with the advancements in science and technology.

The BWC Implementation Support Unit (ISU) is partnering with the Ministry of External Affairs (MEA) of India to organize a two-day conference to review the developments in science and technology relevant to the Convention in preparation for the upcoming Review Conference. This conference aims to bring together academic and industry leaders worldwide to discuss the latest developments in science and technology relevant to the BWC. The conference will have a series of thematic sessions involving presentations and panel discussions from international experts.

Moreover, special sessions will be organized on youth engagement in the BWC and the science-policy interface in biosecurity and biological disarmament. The organization of this conference is funded by the European Union through [Council Decision 2021/2072](#).

The input collected from this conference will inform and feed into the substantive discussions that will take place during the Review Conference. The findings from the conference will be compiled in a conference report and will be made available publicly online to inform a wider audience. Further, the input will contribute to starting the 'Science for Diplomats' initiative, also funded through EU Council Decision 2021/2072, which aims at familiarizing policy makers with key technological and scientific advances of relevance to the Convention in the margins of official BWC meetings in Geneva.

Objectives

The primary objectives of the conference are listed below:

- To inform States Parties and stakeholders of the risks and opportunities for the BWC presented by advances in science and technology.
- To collect and compile inputs and feedback on the scientific and technological advances relevant to the BWC and their associated risks and benefits to the Convention.
- To explore the possible opportunities for the Convention resulting from scientific advances, for example, regarding monitoring and verification.
- To help bridge the gaps between academic, industry, and diplomatic communities on matters concerning the BWC and to broaden and strengthen the engagement of the scientific community on issues related to the Convention
- To promote balanced age, gender and geographic representation in scientific deliberations relevant to the Convention.

Agenda

Thematic sessions and agenda points for the conference are mentioned below. Throughout the various segments, both risks and opportunities of the relevant developments in science and technology for the Biological Weapons Convention will be highlighted.

- **Synthetic Biology and Biosecurity:** The last few decades have witnessed tremendous advances in the domain of synthetic biology in areas ranging from genetic engineering and artificial gene synthesis to virology and 3D bioprinting. This session would bring together leaders from academia and industry to share insights on the impact these developments can have on the functioning of the BWC.
- **Agriculture and Biosecurity:** Protecting crops and agricultural animals from harmful bioagents is essential for worldwide food security. The biorisks for agriculture expand beyond the natural causes to include the possible malicious usage of bioagents by State and non-State actors. This session would engage experts from diverse backgrounds to

understand the current opportunities and risks in agricultural biosecurity due to scientific developments.

- **Neuroscience, Neurotechnology and Biosecurity:** There is a long history of interest in the military application of neuroscience and neurotechnology by both state and non-state actors. The risks and opportunities have multiplied in recent years with advances in neurotoxins, brain-computer interfaces and wearable neuro-devices. The experts in this session would discuss and deliberate on the implications of these positive and negative advances on the Convention, including ethical concerns
- **Biorisk Surveillance, Verification and Mitigation:** Early detection and identification of biorisks are essential for monitoring new pathogens and dual-use research. Further, robust mitigation measures are required to manage biosecurity lapses in case of an incident. This session would aim to discuss the risks and benefits of emerging scientific and technological developments in these areas, which may be crucial for the future implementation of the Convention.
- **Artificial Intelligence and Cyber-biosecurity:** There has been enormous growth in the collection and analysis of biological data in the last decade, which has enabled varied applications of advanced algorithms and artificial intelligence. Simultaneously, cyber-attacks on high containment biological labs have risen. In this context, this session will discuss the positive and negative implications of artificial intelligence and cyber-biosecurity on diverse issues including drug discovery and design, biological data protection and supply chain security.
- **Youth Engagement and Gender Considerations in the BWC:** Engagement with the next generation of biosecurity leaders, including young female scientists, is essential for the future sustainability of the Convention. This poster session would provide a platform for young scientists from around the world to present their work, ideas and aspirations for strengthening the Convention.
- **Open Discussion on Science-Policy Interface:** Scientists and policymakers generally have very different priorities, terminologies, timelines and ways of working, which creates challenges in bringing these communities together for the implementation of the Convention. In this session, experts from diverse backgrounds will discuss ways to bridge this gap and develop a robust science-policy interface to strengthen the BWC. Relevant ethical and legal questions raised by the various developments in science and technology and their implications for the Convention will be addressed during this segment.

A more detailed program will be shared with the confirmed participants in due course.