



NOTE BY THE DIRECTOR-GENERAL

RESPONSE TO THE REPORT OF THE THIRTY-FIFTH SESSION OF THE SCIENTIFIC ADVISORY BOARD

1. This Note presents the Director-General's comments on the report of the Thirty-Fifth Session of the Scientific Advisory Board (SAB) (SAB-35/1, dated 16 June 2022) and its ongoing work.
2. Science and technology play a critical role in the implementation of the Chemical Weapons Convention (hereinafter "the Convention"). The work of the OPCW's SAB is important to ensuring that the Director-General, the Technical Secretariat (hereinafter "the Secretariat"), and ultimately the States Parties are kept apprised of key developments in science and technology relevant to the Convention. The SAB's advice is instrumental to policy decisions made both inside and outside of the Organisation.
3. The Director-General notes the Board's continued efforts to conduct its work, in spite of the continued challenges posed by the COVID-19 pandemic and conflicts around the world. The Director-General congratulates the Board on meeting in person for the first time in three years and reiterates his appreciation for the Board members' dedication to the OPCW. The Board's Report on Developments in Science and Technology for the upcoming Fifth Conference of the States Parties to Review the Operation of the Chemical Weapons Convention (hereinafter "Scientific Report") is highly anticipated and will help provide a sound scientific and technical basis for discussions at the Fifth Review Conference.

RESPONSE TO THE REPORT OF THE THIRTY-FIFTH SESSION OF THE SCIENTIFIC ADVISORY BOARD

4. The SAB met for its Thirty-Fifth Session from 13 to 16 June 2022 at the OPCW Headquarters in The Hague, the Netherlands. The session was chaired by Mr Günter Povoden, with Dr Andrea Leisewitz serving as Vice-Chairperson. The report of the session was issued as SAB-35/1, dated 16 June 2022.
5. In his opening remarks (paragraphs 5.1 to 5.5 of SAB-35/1), the Director-General, H.E. Fernando Arias, welcomed everyone to the Board's first in-person meeting in a long time. He reiterated the importance of the Board meeting in person, as doing so allows the SAB to more efficiently conduct its work and promotes collegiality among the Board members—an important aspect to a high-performing advisory board.
6. The Director-General provided a summary of recent updates on the Centre for Chemistry and Technology (ChemTech Centre) and indicated his interest in the SAB's input on potential scientific activities and programmes that could be held at the Centre once it is open.



7. The Director-General then highlighted the decision that States Parties adopted at the Twenty-Sixth Conference of the States Parties (hereinafter “the Conference”) entitled “Understanding Regarding the Aerosolised Use of Central Nervous System Acting Chemicals for Law Enforcement Purposes” (C-26/DEC.10, dated 1 December 2021). He reiterated that the SAB’s advice throughout the years has been valuable in relation to this topic and indicated his interest in the Board’s updated thoughts on this topic.
8. The Director-General ended by emphasising the significance of the Board’s Scientific Report in support of the Fifth Review Conference before wishing them a productive meeting.

UPDATES AND DISCUSSION ON THE BOARD’S SCIENTIFIC REPORT FOR THE FIFTH REVIEW CONFERENCE (PARAGRAPHS 10.1 TO 10.2 OF SAB-35/1)

9. The approach taken by the Board on preparing its Scientific Report for the Fifth Review Conference is both prudent and appropriate. The Director-General understands the challenges the Board has faced over the past few years. In short, virtual SAB sessions have resulted in the Board having less time and fewer opportunities to consider recent developments in science and technology, making it more difficult to form adequate advice. That notwithstanding, the Board has been working hard to prepare a comprehensive review of advances in science and technology with a focus on the significant developments made over the last five years and those that are most relevant to the Convention and the work of the OPCW. The Director-General notes the comprehensive nature of the Board’s previous Scientific Report in support of the Fourth Review Conference in 2018, and agrees with the Board’s current efforts and focus.

TALES FROM THE CHEMICAL UNIVERSE: BLURRED BOUNDARIES AND LIST-LESS CHALLENGES (PARAGRAPHS 7.1 TO 7.4 OF SAB-35/1)

10. It is critical that the OPCW continue to monitor new approaches that help ensure that the world stays safe from the use of chemical weapons. Dr Jonathan Forman’s presentation highlighted some of the issues related to this topic, and he described some novel approaches to overcoming continued challenges in the chemical threat space. The Director-General agrees that innovation and an open mindset are important to the OPCW in maintaining readiness and remaining fit for purpose as an organisation. The SAB assists the Organisation in its monitoring of scientific and technological advances. The Director-General also highlights the OPCW’s considerable efforts in upgrading the existing OPCW Laboratory and Equipment Store into a state-of-the-art Centre for Chemistry and Technology, another example of the Organisation’s commitment to its goals to rid the world of chemical weapons and promote the peaceful uses of chemistry.

**NEUTRALISATION AND DETECTION OF ORGANOPHOSPHATES:
VERSATILE, FAST, SELECTIVE, AND SUSTAINABLE (PARAGRAPHS 8.1
TO 8.6 OF SAB-35/1)**

11. The Director-General notes the importance of ongoing research in the field of organophosphate detection. Research in this field, like that of Professor Elisa Orth's, helps ensure that new detection technologies are better, less expensive, and more accessible to those that need them. This is important in view of the fact that there are many organophosphate compounds that are important to detect and track—not just chemical weapons agents, but also pesticides that can be found in every country in the world. In this respect, the work of Professor Orth's research group to develop an inexpensive and reliable portable sensor for the detection of organophosphate-based pesticides is a welcome development.
12. The Director-General asks the SAB to continue to monitor novel and innovative approaches to the proper tracking and management of organophosphorus compounds. He notes that these approaches may not always be based on new, expensive technology; they might also include low-cost approaches or innovative approaches to the governance and management of pesticides, for example.

**SUPPORTING CHEMICAL WEAPONS NON-PROLIFERATION BY
EXPANDING THE CHEMICAL WEAPONS CONVENTION SCHEDULES
AND LEVERAGING CHEMINFORMATICS SOLUTIONS (PARAGRAPHS
9.1 TO 9.5 OF SAB-35/1)**

13. The two decisions adopted by the Conference at its Twenty-Fourth Session to add four new entries to Schedule 1 of the Annex on Chemicals to the Convention was a landmark development (C-24/DEC.4 and C-24/DEC.5, both dated 27 November 2019). It was the first time in the Convention's history that new chemicals were added to the Schedules in the Annex on Chemicals. With the entry-into-force of these changes in 2020, these newly scheduled chemicals became part of the verification regime, and the OPCW has been verifying their declarations by States Parties since.
14. The Director-General read with interest the synopsis of the presentation by Professor Stefano Costanzi. Certainly, additional expansion of the Schedules would further strengthen the verification regime in monitoring chemical weapons agents and their precursors. It is apparent that there are other known toxic chemicals with little-to-no commercial utility that remain unscheduled. However, this also has ramifications for States Parties as well as the chemical industry. The fact that not all chemicals that may pose a threat are scheduled chemicals underlines the importance of the general purpose criterion in the Convention, which states that any chemical intended for chemical weapons purposes, regardless of whether it is specifically listed in the Convention or its Annexes (including the three schedules of chemicals), is considered a chemical weapon.
15. Predefined lists of chemicals that everyone agrees upon—such as the Convention's Annex on Chemicals—require additional scrutiny and are just one part of a successful non-proliferation regime. Frontline officers, such as customs agents or border officials, need to be able to utilise any given control list to properly interdict dual-use materials that may be misused. The Nonproliferation Compliance Cheminformatics Tool that Dr Costanzi's research group is developing with the Stimson Center looks to be an interesting new tool for assisting frontline officers in properly identifying chemicals of concern such that they can appropriately triage any given situation.

RESPONDING TO ADVANCES IN SCIENCE AND TECHNOLOGY: CHALLENGES AND OPPORTUNITIES (PARAGRAPHS 11.1 TO 11.8 OF SAB-35/1)

16. The Director-General agrees that the advice of the SAB has been instrumental in the work of the OPCW and its Member States; the Board continues to guide them on scientific and technical matters of relevance to the Convention. The Director-General notes the Board's ability to be agile in its provision of advice, as well as its ability to provide a broad monitoring of technology while also providing appropriate in-depth analyses of areas of particular importance to the OPCW, even on specific implementation issues. Advances and innovations in science and technology can be misused, and the Board must continue its efforts to identify potential future challenges. However, as noted by speaker Dr Ralf Trapp, scientific advances also provide an opportunity to better combat chemical weapons via next-generation detectors and medical countermeasures, as well as to strengthen verification approaches.
17. Communication and messaging is just as important as the technical aspects of scientific advice. Scientific advice is only useful if it is fully accessible to and understood by its target audience. In that respect, the Director-General acknowledges the Board's efforts to ensure that the scientific advice it provides is factual, unbiased, free from jargon, and generally appropriate for the OPCW and its States Parties.

UPDATES FROM THE OPCW TECHNICAL SECRETARIAT (PARAGRAPHS 6.1 TO 6.4, PARAGRAPHS 13.1 TO 13.3, PARAGRAPHS 14.1 TO 14.4, AND PARAGRAPHS 17.1 TO 17.8 OF SAB-35/1)

18. The Director-General highlights the need to continue to keep the SAB informed of the relevant work taking place within the Organisation, including through the SAB Secretary and other Secretariat staff members. These updates help provide context for how the Board's advice can be useful for ongoing and future activities, and gives the Board a forum for asking questions and providing additional comments.
19. The Director-General also notes, with great appreciation, the assistance and participation of the International Union of Pure and Applied Chemistry (IUPAC) and the chemical industry in activities relevant to the Board's mandate. IUPAC and the chemical industry are long-standing, valued partners of the OPCW and it is encouraging to see these relationships continue to be strong and mutually beneficial.
20. The SAB is scheduled to convene the last of its three sessions of the year during the last week of September. The Director-General appreciates the ongoing leadership of the SAB's Chairperson and Vice-Chairperson.
21. Lastly, the Director-General expresses his thanks to all States Parties, organisations, and institutions that have financially assisted the work of the SAB.