

Twenty-Second Session of the Conference of States Parties

Remarks by Dr Christopher M. Timperley

Chairperson of the OPCW Scientific Advisory Board

30 November 2017

Mr. Chairman,

Mr. Director-General,

Distinguished ambassadors and delegates

(Slide 1) It is an honour to provide this update on the status of the Scientific Advisory Board's science and technology report to the Fourth Review Conference.

Since the last Review Conference, the OPCW has addressed with the highest integrity new and unexpected challenges. It has conducted with meticulous care technical activities not envisioned when the Convention entered into force. To complete these tasks effectively, requires the gathering of irrefutable facts, using existing and new scientific methods that have evolved over the 20 years' of the OPCW, that augment or even replace traditional methods.

The need for scientific literacy in the implementation of the Convention, including the validation of results, endures. The Board will continue to provide objective and independent technical guidance to ensure the OPCW keeps pace with technological change.

(Slide 2) Article VIII Section B paragraph 21(h) of the Convention requests States Parties to review scientific and technological developments that could affect the operation of the Convention. An interesting point is that nowhere does it mention chemistry or challenges to the Convention, which are the two things heard most often in discussions on science and technology related to the Convention.

(Slide 3) In the 21st Century, scientists must be engaged across scientific boundaries, seek information and maintain visibility. This has been the guiding principle of the Board during the information gathering required for its science and technology report, which has involved:

- Three temporary working groups, spanning: the convergence of chemistry and biology, verification, and education and engagement,

- Seven sessions of the Board,
- Five responses to questions from the Director-General, on assistance and protection, scheduled chemicals (twice), chemical weapons sample stability and storage, and which riot control agents are subject to declaration under the Convention,
- And, four international workshops generously funded by the European Union.

This review has comprised 25 events attended by nearly 700 participants, with more than 400 presentations from speakers from 56 nations. During this time the Board has produced 30 reports. I, and the Board's Vice-Chair, Mr. Cheng Tang, convey to all contributors our deepest gratitude. We also appreciate the inspirational support provided by the Director-General, and the Board's Secretary, Dr. Jonathan Forman.

I wish now to summarize the workshops:

(Slide 4) The workshop with VERIFIN on chemical forensics held in Helsinki in June last year provided valuable insights into investigative methods. Scientific advances enable laboratories to identify the presence of toxic chemicals, and when and how they may have been produced. The Board is pleased that there are laboratories designated as proficient in the analysis of biomedical and environmental samples, which has enhanced OPCW's investigative capacity.

(Slide 5) The workshop in Paris held in September 2016 was co-organised with the French Secrétariat Général de la Défense et de la Sécurité Nationale (SGDSN) and focused on devising a more effective response to chemical agent exposure. This is critical to saving lives and lowering the impact of chemical weapons. The work extended advice from the Board on medical countermeasures to treat the effects of toxic chemicals, as part of the Board's commitment to assistance and protection.

(Slide 6) The Board in cooperation with the International Union of Pure and Applied Chemistry (IUPAC); The National Academies of Science, Engineering and Medicine of the United States of America; the Brazilian Academy of Sciences; and the Brazilian Chemical Society held a workshop on "Innovative Technologies for Chemical Security" in July 2017 in Rio de Janeiro, Brazil. The workshop focused on recognising chemical changes in the environment (including in vegetation), mobile and wearable technologies (the "inspector of the future"), point-of-care diagnostics, big data analysis relevant to the Convention, and

sample collection in remote and dangerous environments. Various technologies to reduce the risk to inspectors operating in such arenas were proposed for further consideration.

(Slide 7) The Board thanks IUPAC for a strong and productive relationship. IUPAC publishes before each Review Conference a report on the impact of scientific developments on the Convention in the journal *Pure and Applied Chemistry*. For the Fourth Review Conference, a special issue will be published containing technical articles relating to the theme of the Rio workshop.

(Slide 8) The Board's workshop on "Trends in Chemical Production" was held in Zagreb in October in 2017 in cooperation with the Institute of Medical Research and Occupational Health. It was organised under the auspices of the Croatian President; the Ministry of Economy, Entrepreneurship and Crafts; and the City of Zagreb. The Board invited experts from sectors of the chemical industry, experts in chemical synthesis and production, and stakeholders involved in implementing the Convention to consider the influence of technological change on chemical manufacturing. Insights generated from this overview of the chemical industry were highly informative.

(Slide 9) It is satisfying that the Board's work has become better known through regular briefings to States Parties, at side-events and at Science for Diplomats, which are becoming increasingly interactive **(Slide 10)**. The presentations are available on the OPCW public website. The Vice-Chair of the Board briefed the Open-Ended Working Group on Future Priorities in January. The Board stands ready to brief the States Parties in any appropriate forum.

This year the Board has again explored new partnerships and strengthened existing ones with science-based organisations. Various activities exemplify this outreach function, including my appointment to the Scientific Programme Committee of the CTBTO's Science and Technology Conference (held in June); and the support of myself and the Board's Vice-Chair to an OPCW side event on "Science, Industry and the Chemical Weapons Convention", at the Meeting of States Parties of the Biological Weapons Convention in Geneva on 5 December.

Ladies and gentlemen,

(Slide 11) As long as there is the use or threat of use of chemical weapons, the excellent analytical capabilities of the OPCW must continue to evolve with technological change in order to remain fit for purpose. It is therefore vital that the OPCW has available state-of-the-

art methods and facilities for chemical analysis and training. The Board supports the upgrade of the OPCW Chemical Laboratory to a ‘Centre for Chemistry and Technology’.

Analytical procedures used by OPCW inspectors and designated laboratories remain essential for verification. They evolved from a manual entitled “Recommended Operating Procedures for Analysis in the Verification of Chemical Disarmament”, the “Blue Book”, published in 1994 by VERIFIN in Finland.

An updated edition of the Blue Book will be launched at an “International Workshop on the Analysis of Chemical Warfare Agents to Mark the Twentieth Anniversary of the OPCW” in Helsinki from 11-13 December. Members of the Board and scientists from OPCW-designated laboratories have contributed to the new Blue Book.

(Slide 12) In recent years, OPCW contingency operations have involved analysis and fact-finding, with collection and evaluation of oral, material, and digital evidence of the use of toxic chemicals. Such aspects are not part of routine verification activities. We are pleased that the Director-General has accepted the Board’s recommendation to establish a Temporary Working Group on “Investigative Science and Technology” to review the methods and technologies used in investigative work; its first meeting will be held in February 2018.

The ongoing work of the Board will strengthen further the effectiveness of the Convention across our work in destruction, preventing re-emergence, assistance and protection, and international cooperation.

(Slide 13) The Board intends to finalise its Fourth Review Conference report at its Twenty-Seventh Session in March 2018. This report will be innovative, future-looking and bold. It should stimulate forward-looking discussions on scientific dimensions of the OPCW’s work.

I request that this statement be issued as an official document of this session of the Conference of States Parties and posted on the OPCW public website.

(Slide 14) Thank you.