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### NOTE BY THE DIRECTOR-GENERAL

#### RESPONSE TO THE REPORT OF THE SEVENTEENTH SESSION OF THE SCIENTIFIC ADVISORY BOARD

1. The Scientific Advisory Board (SAB) met in The Hague, the Netherlands, for its Seventeenth Session from 21 to 23 November 2011. The report of the session has been issued as SAB-17/1, dated 23 November 2011.
2. The Director-General, after a careful study of this report, is pleased to submit to the Executive Council (hereinafter “the Council”) the following comments and recommendations on the work of the SAB.

Report of the sixth meeting of the temporary working group on sampling and analysis (paragraph 7 of SAB-17/1)

3. The Director-General notes the temporary working group’s proposal on the procedure developed by the OPCW Laboratory that will reduce the on-site sample preparation time for the analysis of aqueous samples (see paragraphs 14 and 15, below).
4. The Director-General notes that the temporary working group has agreed the methods and provisional criteria for the identification of saxitoxin and appreciates the group’s efforts in this area. The Secretariat will start to implement the recommended methods. The Director-General requests the temporary working group to continue to give attention to the analysis of ricin.
5. In order to refine the procedures that are used for off-site analysis in cases of investigations of alleged use (IAUs) of chemical weapons, the Director-General intends to exercise all relevant procedures (from on-site sample collection to the submission of reports from designated laboratories). The Secretariat will explore whether this can be done in conjunction with an IAU exercise that is being planned for late 2012.
6. The Director-General appreciates the temporary working group’s efforts to establish criteria for trace analysis, and has incorporated many of its ideas into the evaluation criteria for the second confidence-building exercise for the analysis of biomedical samples, scheduled to take place in February 2012 (S/908/2011, dated 8 March 2011). The laboratories participating in this exercise will provide the data to be used to evaluate and refine these criteria.



7. The Director-General encourages the temporary working group to conclude, if possible, work on the outstanding issues on its agenda by its seventh meeting (tentatively scheduled for the second half of 2012), including through intersessional work. He notes that there is currently no funding for a seventh meeting, and requests States Parties to consider making voluntary contributions to the SAB Trust Fund for this purpose.

Report of the first meeting of the temporary working group on the convergence of chemistry and biology (paragraph 8 of SAB-17/1)

8. It is increasingly important to consider the relevant implications for the effective implementation of the Chemical Weapons Convention (hereinafter “the Convention” that arise from the increasing pace of developments in science and technology and the integration of scientific disciplines—especially, but not limited to, the convergence of chemistry and biology.
9. The Director-General notes the temporary working group’s conclusion that, for classical chemical-warfare agents, such as nerve agents and blister agents, there would not appear to be any advantage in trying to produce such chemicals through biologically mediated processes. However, as described below in paragraph 12, the Director-General agrees that trends in the commercialisation of biologically mediated processes should be monitored. He also recognises that the practical limitations regarding the technical capability to chemically synthesise many toxins, bio-regulators and biologically active peptides need to be assessed, and he encourages States Parties to share any information they may have on the subject.
10. The Director-General notes that, at its first meeting, the temporary working group focused primarily on issues relating to production. While acknowledging the value of this and requesting the group to continue to pay attention to this aspect, the Director-General requests the temporary working group, at its subsequent meetings, to also address other related issues, particularly those concerning the potential benefits to the Convention of the convergence of chemistry and biology (see paragraph 8.7 of SAB-17/1).

Incapacitating chemical agents (paragraph 9 of SAB-17/1)

11. The Director-General notes the briefing on a workshop on incapacitating chemical agents which took place in September 2011, and encourages the SAB to review the report of the workshop when it is circulated. He recalls the SAB’s recommendation in the report of its Fifteenth Session (SAB-15/1, dated 14 April 2010) that it start “deliberations on riot control agents and incapacitating chemical agents by receiving briefings on the different technical, legal, law enforcement, military, and political aspects surrounding the subject in order to identify the technical areas in which it can be of most assistance” (paragraph 13.3 of SAB-15/1).

Production by synthesis (paragraph 10 of SAB-17/1)

12. The Director-General notes the presentation given to the SAB on production by synthesis and the fact that biological process routes for certain chemicals are now being perfected. While this development does not yet affect chemicals of relevance to the Convention, the Director-General agrees with the SAB's recommendation that commercialisation trends of biologically-mediated processes should continue to be monitored. The Secretariat intends to assist the SAB in this matter, and the Director-General encourages States Parties to share any experience they may have on the subject. This topic should be considered in detail by the temporary working group on the convergence of chemistry and biology.
13. Given the increased production of chemicals using biological processes since the SAB last studied this issue, the Director-General agrees that the SAB should revisit the report on the meaning of production by synthesis (see Annex 2, SAB-II/1, dated 23 April 1999). Furthermore, the Secretariat intends to assess how new commercial-scale facilities are used for the production of chemicals.

Sampling and analysis during routine industry inspections (paragraph 11 of SAB-17/1)

14. The Director-General believes that sampling and analysis is an important verification tool for Schedule 2 inspections. The conduct of sampling and analysis during routine industry inspections has also been an important way of increasing the level of preparedness of the Secretariat to carry out related tasks, where higher standards of logistical and technical skills are required (for example, during challenge inspections or during investigations of alleged use).
15. Extension of sampling and analysis to routine inspections conducted at other chemical production facilities and at Schedule 3 facilities is under consideration by the Secretariat. Since such inspections must be completed within 24 hours, the Secretariat's ability to extend sampling and analysis to these kinds of inspections will largely depend on its success in achieving a further reduction in the time required for an inspection team to set up a laboratory, collect, prepare, and analyse samples, and to interpret the data. The Secretariat intends to conduct relevant tests and pilots.

Captive use of schedule 1 chemicals (paragraph 12 of SAB-17/1)

16. As recommended by the SAB at its Sixteenth Session, the Secretariat has taken several opportunities to inform States Parties of the implications of the production of Schedule 1 chemicals in captive-use situations. This will continue in appropriate forums, and States Parties are encouraged to thoroughly consider the implications.

Scheduled chemicals, including ricin and saxitoxin (paragraph 13 of SAB-17/1)

17. The Director-General notes that the SAB has adopted a fact sheet on saxitoxin, and that it plans to soon finalise a similar fact sheet on ricin. He will consider those to whom the fact sheets should be disseminated. The Director-General also notes the SAB's conclusion regarding saxitoxin; States Parties may wish to consider this in a longer-term strategic context, for example, in relation to the Third Special Session of the Conference of the States Parties to Review the Operation of the Chemical

Weapons Convention (hereinafter “the “Third Review Conference”), which will be held in April 2013, and to the recommendation from the Advisory Panel on the Future Priorities of the OPCW regarding the review of the schedules of chemicals (see paragraph 52 of S/951/2011, dated 25 July 2011).

Future priorities of the OPCW: Scientific and technological aspects (paragraph 14 of SAB-17/1)

18. The Director-General appreciates the views of the SAB on the future priorities of the OPCW, which he outlined. Discussions among States Parties on the future priorities of the OPCW will continue. Furthermore, the Director-General has established the new post of Science Policy Adviser within the Secretariat; recruitment is under way and the post is expected to be filled in the first or second quarter of 2012.

The impact of advances in science and technology on the Chemical Weapons Convention (paragraph 15 of SAB-17/1)

19. The Director-General notes that the International Union of Pure and Applied Chemistry (IUPAC) will organise an international workshop on the impact of advances in science and technology on the Convention in Spiez, Switzerland from 20 to 23 February. While the workshop will be independently organised by IUPAC, the OPCW is providing co-funding, in particular to ensure both broad participation and deep exploration of relevant topics. The Director-General expects that the key outcomes of the workshop will be made available to enable the SAB, the Secretariat, and States Parties to inform their deliberations on science and technology prior to, and at, the Third Review Conference.
20. As was the case prior to the two previous review conferences, the IUPAC workshop will represent a significant contribution to the SAB’s deliberations on its report on developments in science and technology, which the Director-General intends to provide to States Parties well in advance of the Third Review Conference. The Director-General welcomes the establishment of a correspondence group to begin drafting the SAB report. The Director-General expects the SAB report to be presented to him by September 2012. This report is important and the Director-General expects all SAB members to make substantive contributions to the report in their areas of expertise.
21. The Director-General intends to engage not only the scientific communities, but also the chemical industry on relevant developments in science and technology, drawing both on the report of the SAB and on a range of other potential inputs and sources. He intends to approach industry associations in States Parties to help identify relevant developments in science and technology. In this context, the use of innovative means, e.g. electronic, should be explored in order to draw as broadly as possible on their insights, including between sessions of the SAB.

Outreach to the scientific community (paragraph 16 of SAB-17/1)

22. The Director-General expresses his appreciation to the SAB for the establishment of the temporary working group on education and outreach and to Djafer Benachour for agreeing to chair the group. In accordance with the rules of procedure of the SAB, the

Director-General will soon submit to the Chair the mandate under which the temporary working group will conduct its work. He looks forward to its first meeting and to receiving its recommendations. Outreach should also involve the chemical industry.

23. The Director-General looks forward to receiving on a regular basis SAB advice on how to enhance the outreach activities of the OPCW to the scientific community.
24. The Director-General encourages the temporary working group to build upon previous OPCW work in this area, including by the SAB itself and SAB members, and to take account of education and outreach initiatives in other fields, e.g. in the life sciences and nuclear security. He also recalls that, while the temporary working group will focus on education and outreach relating to chemistry, the education and outreach activities of the OPCW are not limited only to chemistry, and the group's efforts should be seen in this context.

Future work of the Scientific Advisory Board (paragraph 17 of SAB-17/1)

25. Two sessions of the SAB will be held in 2012: the Eighteenth Session from 16 to 19 April and the Nineteenth Session from 10 to 12 September. In 2012, the temporary working groups are each expected to meet once: on 12-13 April (education and outreach) and the first week of September (convergence of biology and chemistry, and sampling and analysis).
26. Funding for the SAB's work in 2012 comes from three sources: the general budget, the European Union, and voluntary contributions from States Parties. The Director-General hopes that States Parties—as encouraged by the Second Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention (paragraph 9.132 of RC-2/4, dated 18 April 2008) and with reference to the Secretariat's calls for voluntary contributions to the SAB Trust Fund—will continue their financial assistance.
27. It is important that all SAB members make substantive contributions, at every meeting of the SAB and at its temporary working groups, as well as during the intersessional periods. The Director-General encourages States Parties, when they are considering whether to nominate candidates for the SAB (a call for nominations for four seats will be issued in early 2012), to ensure that the candidates are eminent scientists, knowledgeable about the Convention, and committed to making real contributions to the understanding of science and technology to advance the implementation of the Convention. Any one State Party may wish to nominate more than one person.