

**NOTE BY THE DIRECTOR-GENERAL****RESPONSE TO THE REPORT OF THE TWENTY-FIRST SESSION  
OF THE SCIENTIFIC ADVISORY BOARD**

1. This Note sets out the Director-General's comments on the report of the Twenty-First Session of the Scientific Advisory Board (SAB), the future work of the SAB, and other matters relating to science and technology.
2. An understanding of developments in science and technology is crucial to the full and effective implementation of the Convention, especially in regard to Articles II to XI. Therefore, robust technical advice from the SAB is vital to the work of the Technical Secretariat (hereinafter "the Secretariat") and to the States Parties. With reference to the role of analytical chemistry in investigations of alleged use of chemical weapons, the Director-General wishes to thank current and previous SAB members for their contributions to ensuring the readiness of the OPCW to respond to unexpected and unprecedented situations. Advances in science and technology, and their impact on security, drive the Organisation's work: science and technology play an especially important role in guarding against the re-emergence of chemical weapons—in any guise—and also allow States Parties and the Secretariat to improve protective capacity.
3. The Director-General recognises the contributions of the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of Australia to the SAB trust fund this year. These contributions enable, in particular, the holding of meetings of the temporary working groups, and allow the SAB to continue providing valuable advice on relevant scientific and technological developments. The Director-General encourages other States Parties to consider making voluntary contributions to the SAB trust fund; contributions can also be in the form of the return of any cash surplus to be distributed to the States Parties in accordance with Financial Regulation 6.3 of the OPCW (C-15/DEC.5, dated 1 December 2010): the relevant information is available in the most recent call for contributions (S/1119/2013, dated 24 July 2013) or can be provided by the SAB Secretary.



## **REPORT OF THE TWENTY-FIRST SESSION OF THE SCIENTIFIC ADVISORY BOARD**

4. The SAB met in The Hague, the Netherlands, for its Twenty-First Session from 23 to 27 June 2014<sup>1</sup>, the report of which has been issued as SAB-21/1 (dated 27 June 2014). The Director-General is grateful to the SAB for its valuable advice, and expresses his appreciation to Professor Alejandra Suárez for chairing the Twenty-First Session and to Dr Christopher Timperley for serving as Vice-Chairperson. He also welcomes five new members of the Board: Dr Veronica Borrett (Australia), Dr Syed K. Raza (India), Mr Valentin Rubaylo (Russian Federation), Dr Koji Takeuchi (Japan), and Mr Cheng Tang (China).
5. After a careful study of the report of the Twenty-First Session of the SAB, the Director-General is pleased to submit to the Executive Council (hereinafter “the Council”) the following comments.

### **Developments in science and technology (paragraph 7 of SAB-21/1)**

#### Convergence of chemistry and biology

6. The Director-General expresses his appreciation to the SAB and the members of the temporary working group (TWG) on the convergence of chemistry and biology for their recommendations and final report (which has been issued by the Secretariat as SAB/REP/1/14, dated 27 June 2014),<sup>2</sup> with which he agrees. He is especially grateful to Mr William Kane for ably chairing this TWG for the past two years and to Dr Robert Mathews for developing a constructive course for the TWG and chairing its first meeting in 2011.
7. It is clear that further analysis of the convergence of the sciences is needed. The Annex to this Note contains a summary of actions to be taken in order to implement the recommendations, notably:
  - (a) In view of the importance of engaging experts and policy-makers in the biological-weapons disarmament community, William Kane presented the SAB’s report during the Meeting of Experts of the Biological Weapons Convention (BWC) in August this year. Furthermore, the Director-General intends to invite the Chairperson of the BWC meetings to The Hague at a mutually agreeable time. Moreover, the practice initiated two years ago of holding side events (with SAB and TWG members, as well as other experts) in the margins of the BWC Meetings of States Parties and Meetings of Experts will continue; such events also have an important education-and-outreach dimension;
  - (b) The Secretariat and the SAB will continue to augment the capacity to monitor the relevant developments in science and technology, and will draw on further insights from the global scientific community. This action will also help to address the observations and recommendations of the SAB regarding the

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<sup>1</sup> <http://www.opcw.org/news/article/opcw-scientific-advisory-board-issues-report-on-the-convergence-of-chemistry-and-biology>

<sup>2</sup> [http://www.opcw.org/index.php?eID=dam\\_frontend\\_push&docID=17438](http://www.opcw.org/index.php?eID=dam_frontend_push&docID=17438)

monitoring of developments in science and technology in all areas relevant to the Convention (paragraphs 7.14, 7.15, and 12.3 of SAB-21/1);

- (c) The Secretariat intends to facilitate the SAB's continued analysis of the convergence of the sciences in the next two to three years (see also paragraphs 19 and 20 below);
- (d) The Director-General will continue to augment the engagement with relevant scientific entities and international organisations. He notes that convergence-related events are being planned by a variety of entities; and
- (e) The Director-General encourages States Parties to contribute their assessments of the convergence of the sciences and the potential impact on implementation of the Convention and, as appropriate, the BWC.

**Scientific and technological elements of verification technologies, emerging technologies and new equipment (paragraph 8 of SAB-21/1)**

- 8. The Director-General notes the deliberations by the SAB and its TWG on verification and will make arrangements for this TWG to hold its fourth meeting from 29 September to 1 October 2014.
- 9. Regarding riot control agents, a note has been issued by the Secretariat (S/1177/2014, dated 1 May 2014) containing the SAB's advice, namely, that "17 chemicals correspond to an RCA as defined by paragraph 7 of Article II of the Convention" (paragraph 3 of S/1177/2014).

**Further scientific and technological advice relevant to the Convention (paragraph 9 of SAB-21/1)**

Education and outreach in science and technology

- 10. The Director-General expresses his appreciation to the members of the TWG on education and outreach in science and technology for the report of its third meeting (SAB-21/WP.3, dated 7 January 2014). Awareness-raising and education and outreach are extremely important activities for the future of the OPCW. It is a collective effort that requires the active support of States Parties. Learning from, and collaborating with, other actors—including international organisations, professional associations, industry associations, and scientific unions—will also be crucial for the success of such activities.
- 11. The Director-General is grateful to the SAB, as well as TWG members, for continuing to participate in and make interventions during relevant events, meetings, networks, and projects arranged by other organisations, and for their continued support to the development of educational materials for students of chemistry.
- 12. The Secretariat continues to augment its outreach activities and has issued a Note describing these activities (EC-76/S/4, dated 1 July 2014).
- 13. On the basis of the experiences from the above-mentioned work, the further advice of the SAB in the coming year, and the comments on a non-paper by the Secretariat

made available to States Parties in July 2013, the Secretariat will develop a strategy to guide activities in education and outreach in science and technology:

14. Education and outreach was discussed by the Council at its Seventy-Sixth Session, when the Council “encouraged the Secretariat to continue implementing the appropriate recommendations of the Third Review Conference regarding education and outreach and also the recommendations reached at the regional meeting on education and outreach held in Buenos Aires from 7 to 9 April 2014” (paragraph 12.3 of EC-76/6, dated 11 July 2014).

Assistance and protection: medical countermeasures and treatment for blister and nerve agents

15. The SAB’s advice on medical countermeasures and treatment for blister and nerve agents, has been issued in a working paper (SAB-21/WP.7, dated 29 April 2014)<sup>3</sup>. This advice serves as a valuable reference for medical professionals and emergency responders who may not have knowledge of symptoms and treatment options related to exposure to chemical warfare agents. To capture insight on long-term aspects and emerging new medical countermeasures, one additional question was introduced to the SAB at its Twenty-First Session (paragraphs 9.20 and 9.21 of SAB-21/1).

Decontaminants

16. The Director-General was pleased to see the SAB address the matter of decontaminants, which are important in emergency response (paragraphs 9.22 and 9.23 of SAB-21/1).

**FUTURE WORK AND OTHER BUSINESS OF THE SCIENTIFIC ADVISORY BOARD**

17. Interaction between the SAB and the policy-making organs has increased in the past three years. The Director-General is pleased that this continued during the Twenty-First Session of the SAB, with interested States Parties being briefed by the Chairperson and Vice-Chairperson of the SAB on 26 June 2014. The high degree of participation by delegates is another indicator of the interest in science and technology demonstrated by States Parties. The Chairperson of the SAB will continue to provide such briefings in the margins of relevant sessions of the Council and the Conference of the States Parties (hereinafter “the Conference”): the next occasion will be during the Nineteenth Session of the Conference, in December 2014. Additional means by which interaction can be enhanced will continue to be explored; these now include the discussion of science and technology during the annual meetings of National Authorities.
18. The Twenty-Second Session of the SAB is scheduled for 8 to 12 June 2015. The Secretariat will, as usual, make appropriate arrangements for this session, and for the TWG meetings that will precede it. The Director-General is extremely grateful to the SAB and TWG members for their intersessional work.

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[http://www.opcw.org/index.php?eID=dam\\_frontend\\_push&docID=17285](http://www.opcw.org/index.php?eID=dam_frontend_push&docID=17285)

19. Several factors determine the number of SAB sessions held each year, including the following: the scope and depth of the SAB's deliberations, the costs involved, and the Secretariat's follow-up to the SAB's recommendations. Looking at matters in terms of a five-year perspective, two sessions need to be held in each of the two years preceding a review conference (when the SAB is developing its report on science and technology for the review conference); one session will usually be sufficient in the year of a review conference, as well as in each of the two subsequent years. In both 2016 and 2017, it will be necessary for the SAB to hold two sessions.
20. To support the SAB's deliberations on the full breadth of developments in science and technology relevant to the Convention and the development of the SAB's report to the Fourth Special Session of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention in 2018, the Secretariat intends to provide administrative and financial support for a series of focused scientific workshops between 2015 and 2017. The Director-General wishes to take this opportunity to encourage States Parties, the industry, and scientific, academic, and other organisations to organise science and technology workshops that are of relevance to the Convention and to share the insights gained with the OPCW.

#### **OTHER MATTERS RELATING TO SCIENCE AND TECHNOLOGY**

21. The Secretariat initiated a topical collection of peer-reviewed research articles on the *Analysis of Chemicals Relevant to the Chemical Weapons Convention* in the August 2014 issue of the journal *Analytical & Bioanalytical Chemistry*,<sup>4</sup> and Secretariat staff served as guest editors; the articles are available free online<sup>5</sup> until the end of 2014.
22. The most recent issue of *OPCW Today* focuses on science and technology, and includes contributions from SAB members and Secretariat staff members and others. It is intended to demonstrate the importance of science and technology in policy-making for the full and effective implementation of the Convention.

Annex (English only):

Summary of Actions to Implement the Recommendations Made by the Scientific Advisory Board in its Report on the Convergence of Chemistry and Biology

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<sup>4</sup> Volume 406, Number 21, August 2014

<sup>5</sup> [http://link.springer.com/journal/216/topicalCollection/AC\\_e9c41e22cdb3734a79f68506391cf9c7/page/1](http://link.springer.com/journal/216/topicalCollection/AC_e9c41e22cdb3734a79f68506391cf9c7/page/1)

Annex

**SUMMARY OF ACTIONS TO IMPLEMENT THE RECOMMENDATIONS MADE BY THE SCIENTIFIC ADVISORY BOARD  
IN ITS REPORT ON THE CONVERGENCE OF CHEMISTRY AND BIOLOGY<sup>6</sup>**

| Recommendation of the Scientific Advisory Board                                                                                                                                                                                                                                                                                                                                                                                                                                       | Implementation                                                              |                                  |                          |                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Regular<br>TS <sup>7</sup> and<br>SAB<br>monitoring                         | SAB/TS<br>workshops<br>(2015-17) | SAB<br>report to<br>RC-4 | Other                                                                                                                                                              |
| <p><b>Recommendation 1:</b> The SAB,<sup>8</sup> or a suitable TWG,<sup>9</sup> and the TS should continue to monitor advances in production facilities and technologies, and related trends such as outsourcing and modularisation of equipment. Assessments should be made on a periodic basis to determine their relevance to verification under the CWC.<sup>10</sup> Regular engagement with subject matter experts, e.g. from the biotechnology industry, will be required.</p> | ✓<br>(TS: OSP <sup>11</sup> ,<br>VER <sup>12</sup> ,<br>INS <sup>13</sup> ) | ✓                                | Likely                   | <ul style="list-style-type: none"> <li>A SAB TWG could potentially be established in 2016-17 (it could consider all the topics of recommendations 1-11)</li> </ul> |
| <p><b>Recommendation 2:</b> The SAB should monitor developments in biological and biologically-mediated chemical production processes, such as metabolic engineering, synthetic biology and associated enabling</p>                                                                                                                                                                                                                                                                   | ✓<br>(TS: OSP,<br>VER)                                                      | ✓                                | Likely                   | -                                                                                                                                                                  |

<sup>6</sup> SAB/REP/1/14, dated 27 June 2014  
<sup>7</sup> TS = Technical Secretariat  
<sup>8</sup> SAB = Scientific Advisory Board  
<sup>9</sup> TWG=Temporary Working Group  
<sup>10</sup> CWC = Chemical Weapons Convention  
<sup>11</sup> OSP = Office of Strategy and Policy  
<sup>12</sup> VER = Verification Division  
<sup>13</sup> INS = Inspectorate Division

| Recommendation of the Scientific Advisory Board                                                                                                                                              | Implementation                             |                            |                    |                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------|--------------------|-------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                              | Regular TS <sup>7</sup> and SAB monitoring | SAB/TS workshops (2015-17) | SAB report to RC-4 | Other                                                                                                       |
| technologies. Regular engagement with subject matter experts will be required.                                                                                                               |                                            |                            |                    |                                                                                                             |
| <b>Recommendation 3:</b> The SAB should continue to monitor the range of chemicals being studied and produced using biological or biologically-mediated processes.                           | ✓<br>(TS: OSP, VER)                        | ✓                          | Likely             | -                                                                                                           |
| <b>Recommendation 4:</b> The SAB, or a suitable TWG, should review advances in rational enzyme design prior to the next review conference.                                                   | ✓<br>(TS: OSP)                             | ✓                          | Likely             | -                                                                                                           |
| <b>Recommendation 5:</b> The SAB, or a suitable TWG, should review the feasibility of using metabolic engineering or synthetic biology to obtain toxins prior to the next review conference. | ✓<br>(TS: OSP)                             | ✓                          | Likely             | -                                                                                                           |
| <b>Recommendation 6:</b> The TS should increase and maintain in-house knowledge of bioregulators, and possible applications of new developments in drug delivery.                            | ✓<br>(TS: OSP, LAB <sup>14</sup> )         | ✓                          | Likely             | <ul style="list-style-type: none"> <li>The LAB continues to enhance its analytical capabilities.</li> </ul> |
| <b>Recommendation 7:</b> The SAB, or a suitable TWG, should review the synthesis of replicating organisms prior to the next review conference.                                               | ✓<br>(TS: OSP)                             | ✓                          | Likely             | -                                                                                                           |
| <b>Recommendation 8:</b> The SAB, or a suitable TWG, should review progress in the use of enzymes for decontamination prior to the next review conference.                                   | ✓<br>(TS: OSP, LAB, APB <sup>15</sup> )    | ✓                          | Likely             | -                                                                                                           |

<sup>14</sup> LAB = OPCW Laboratory

<sup>15</sup> APB = Assistance and Protection Branch

| Recommendation of the Scientific Advisory Board                                                                                                                                   | Implementation                             |                            |                    |                                                                                                                                                                                                                                                                                                                                                                                                       |
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|                                                                                                                                                                                   | Regular TS <sup>7</sup> and SAB monitoring | SAB/TS workshops (2015-17) | SAB report to RC-4 | Other                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Recommendation 9:</b> The OPCW should monitor advances in protective equipment and possible applications for OPCW personnel as they become commercially available.             | ✓<br>(TS: OSP, INS, LAB, APB)              | ✓                          | Likely             | -                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Recommendation 10:</b> The OPCW should consider possible applications of diagnostic devices to on-site activities as they become commercially available.                       | ✓<br>(TS: OSP, INS, LAB)                   | ✓                          | Likely             | -                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Recommendation 11:</b> The SAB should monitor advances in nanotechnology prior to the next review conference. Regular engagement with subject matter experts will be required. | ✓<br>(TS: OSP)                             | ✓                          | Likely             | -                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Recommendation 12:</b> The SAB and TS should examine ways to increase and maintain in-house, high level knowledge of a broader range of scientific disciplines.                | -                                          | -                          | -                  | <ul style="list-style-type: none"> <li>• The Director-General encourages States Parties to consider a broad range of scientific expertise relevant to the CWC in nominations for the SAB.</li> <li>• The Director-General will continue to ensure the relevant breadth and depth of expertise in SAB TWGs and when organising relevant OPCW events.</li> <li>• The TS surveys a breadth of</li> </ul> |



| Recommendation of the Scientific Advisory Board                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Implementation                             |                            |                    |                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Regular TS <sup>7</sup> and SAB monitoring | SAB/TS workshops (2015-17) | SAB report to RC-4 | Other                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                            |                    | <p>subject matter.</p> <ul style="list-style-type: none"> <li>Knowledge management is a strategic enabler in the OPCW's Medium-Term Plan for 2015-19</li> </ul>                                                                                                                                                                                                       |
| <p><b>Recommendation 13:</b> A venue like the TWG on convergence of chemistry and biology should continue to exist, possibly as a temporary working group or a standing arrangement under the SAB.</p>                                                                                                                                                                                                                                                                                                        | -                                          | ✓                          | Likely             | <ul style="list-style-type: none"> <li>The subject of developments in S&amp;T<sup>16</sup> has been a standing agenda item for sessions of the SAB since 2012.</li> <li>A SAB TWG could potentially be established in 2016-17 (it could consider all the topics of recommendations 1-11)</li> </ul>                                                                   |
| <p><b>Recommendation 14:</b> National Authorities could be encouraged to engage more actively on convergence issues, including interacting with relevant biological and chemical scientific communities and hosting relevant events. A standing item on science and technology at National Authority Days might provide an opportunity to promote and report back on such an activity. Adopting convergence as a major theme for a future National Authority Day would help draw attention to this issue.</p> | -                                          | -                          | -                  | <ul style="list-style-type: none"> <li>The Director-General encourages States Parties to contribute their assessments of the convergence of the sciences and the potential impact on implementation of the Convention and, as appropriate, the BWC.<sup>17</sup></li> <li>The annual meeting of National Authorities addresses S&amp;T, which incorporates</li> </ul> |

<sup>16</sup> S&T = science and technology

<sup>17</sup> BWC = Biological Weapons Convention

| Recommendation of the Scientific Advisory Board                                                                                                                                                                                                                                                                                                                                                                                 | Implementation                             |                            |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                 | Regular TS <sup>7</sup> and SAB monitoring | SAB/TS workshops (2015-17) | SAB report to RC-4 | Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            |                            |                    | <p>convergence-related matters.</p> <ul style="list-style-type: none"> <li>The Secretariat intends to develop and make available educational/outreach materials related to convergence of the sciences.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p><b>Recommendation 15:</b> The SAB and TS should continue to work across areas of overlap between the CWC and the BWC. The Director-General might ask States Parties to consider knowledge of the biological sciences when considering nominating experts to the SAB.</p> <p><b>Recommendation 16:</b> The TS, supported by the SAB, should continue to participate in such meetings and continue to address convergence.</p> | -                                          | -                          | -                  | <ul style="list-style-type: none"> <li>The OPCW should continue to participate – on invitation – in BWC Meetings of Experts and Meetings of States Parties.</li> <li>The TS seeks to continue the practice initiated two years ago of supporting the holding of side events (with SAB and TWG members and other experts) in the margins of the BWC Meetings of States Parties and Meetings of Experts.</li> <li>The TS will continue its collaboration with the BWC in education and outreach activities on the margins of relevant scientific conferences.</li> <li>The Director-General has appointed experts to the SAB who have expertise in the biological sciences, and intends</li> </ul> |

| Recommendation of the Scientific Advisory Board                                                                                                                                                          | Implementation                             |                            |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                          | Regular TS <sup>7</sup> and SAB monitoring | SAB/TS workshops (2015-17) | SAB report to RC-4 | Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                          |                                            |                            |                    | <p>to encourage States Parties to continue to nominate also such experts.</p> <ul style="list-style-type: none"> <li>The TS intends to continue to engage with the CBRN<sup>18</sup> security community to share best practices and learn from the experiences of others in these areas.</li> </ul>                                                                                                                                                                                        |
| <p><b>Recommendation 17:</b> The Director-General might consider meeting with the Chairperson of the BWC and heads of relevant international scientific bodies to explore issues around convergence.</p> | -                                          | -                          | -                  | <ul style="list-style-type: none"> <li>The SAB's report on the convergence of chemistry and biology should be presented during the BWC Meeting of Experts in August 2014.</li> <li>The Director-General intends to liaise with the Chairperson of the BWC meetings.</li> <li>The Director-General continues to augment the engagement with relevant scientific entities and international organisations. Convergence-related events are being planned by a variety of entities.</li> </ul> |

<sup>18</sup>

CBRN = chemical, biological, radiological, nuclear

| Recommendation of the Scientific Advisory Board                                                                                                                                                                                                                                              | Implementation                             |                            |                    |                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                              | Regular TS <sup>7</sup> and SAB monitoring | SAB/TS workshops (2015-17) | SAB report to RC-4 | Other                                                                                                                                                                                                                                                                                                                                 |
| <b>Recommendation 18:</b> Taking into consideration the convergence of chemistry and biology as it relates to the synthesis of chemicals, the TWG was of the view that any process designed for the formation of a chemical substance should be covered by the term “produced by synthesis”. | -                                          | Likely                     | -                  | <ul style="list-style-type: none"> <li>• Technical aspects of the implications for verification are being considered by the SAB’s TWG on verification.</li> <li>• After the SAB’s TWG on verification has delivered its final report, the TS intends to liaise with the industry and develop appropriate policy proposals.</li> </ul> |
| <b>Recommendation 19:</b> The TS should review the technical feasibility of converting a bio-based chemical processing facility to produce chemicals of concern.                                                                                                                             | -                                          | ✓                          | Possibly           | <ul style="list-style-type: none"> <li>• The TS intends to engage with the relevant entities</li> </ul>                                                                                                                                                                                                                               |