

Reflections on Examining Science and Technology

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Over the last two years, the Harvard Sussex Program has been examining how discussions about science and technology (S&T) might be conducted by States Parties to the Biological and Toxin Weapons Convention (BWC) in the future. At the PrepCom for the Seventh BWC Review Conference, we produced a series of papers considering developments in particular areas of science and technology which States Parties had previously considered relevant to the operation of the Convention.¹

This paper presents some of the key findings from our project. These findings are based on empirical data collected over the last eighteen months, using a mixture of questionnaires and interviews to engage with 88 individuals. This includes individuals from 16 BWC State Parties out of a total of 25 contacted, and covers all UN regional groups, with additional participation from leading scientists, representatives of international organisations, civil society and academia.

Background

Calls to do 'something' about how science and technology of relevance to the BWC are reviewed have both a long history and broad support from States Parties to the Convention and civil society. Indeed, nearly all States Parties have at some stage since 1979, either through specific national statement or through association with a group statement, referred to the need to change the process by which the review of BWC-relevant science and technology is performed.²

Although indicative of consensus around doing 'something', there is less evidence of consensus around exactly what should be done. To inform the discussion in Geneva over the course of the Seventh Review Conference, this paper provides some reflections on the issues of frequency,

There is strong consensus (96%) that the frequency of examinations of science and technology should be increased.

There is overwhelming acceptance that advances in S&T have implications for a number of articles of the BWC.

There is unanimous support for some form of participation by members of the science and industrial communities.

Agreement on the objectives will determine how best to organise future examination of S&T.

scope, objectives, participation and output in relation to examining science and technology of potential relevance to the BWC.

Frequency

There was near unanimous support (96%) from project participants for increasing the frequency with which States Parties consider developments in science and technology. Participants were evenly split between continuously collecting and sharing information or doing so on an annual basis as part of a future intersessional process. The desire to increase the frequency of examining S&T is consistent with proposals outlined in advance copies of working papers by inter alia, Australia, Japan and New Zealand; India, the UK, the US, South Africa and China, which have all alluded to the need for more frequent consideration of science and technology relevant to the Convention. One of the primary reasons given for supporting more frequent attention was the pace at which S&T relevant to the Convention is changing.

Increasing the frequency with which science and technology is examined was not proposed as a replacement of the comprehensive review which occurs every five years as part of the Review

¹ See <http://hsp.sussex.ac.uk/sandreviews/results>

² See Revill, J, K Ilchmann, C McLeish and P Nightingale *Proposals for changing S&T Reviews*, April 2011, available at: <http://hsp.sussex.ac.uk/sandreviews/results>

Conference process. Rather more frequent examinations would function as a complementary and additional activity. As apparent in the advance copies of working papers, project participants converged around the idea that some form of 'group' structure might be integrated into a future intersessional work programme. Similar nuanced differences regarding group structures were also evident in our dataset, with several terms used to describe a group including: task group, continuous working group, open-ended working group, temporary working group etc.

Scope of Discussion

All project participants recognised that science and technology can have both positive and negative implications for the Convention. There was unanimous agreement that future examinations of science and technology should not be confined only to Article I. It was thought that consideration of developments in science and technology might also extend to other articles, especially:

Article III: Not to transfer, or in any way assist, encourage or induce anyone else to acquire or retain biological weapons.

Article IV: To take any national measures necessary to implement the provisions of the BWC domestically.

Article VI: To request the UN Security Council to investigate alleged breaches of the BWC and to comply with its subsequent decisions.

Article VII: To assist States that have been exposed to a danger as a result of a violation of the BWC.

Article X: To do all of the above in a way that encourages peaceful uses of biological science and technology.

Looking beyond Article I would enable a more balanced assessment of how S&T developments impact upon the Convention as a whole. For example, a thorough appreciation of developments in disease reporting and surveillance technologies would optimise the delivery of assistance in the event of a violation of the BWC. A discussion on such positive aspects of science and technology could also have the added value of attracting broader state-level participation and supporting efforts to improve engagement with the scientific and industrial

communities. However, ensuring that the scope of the Convention remains all encompassing is a fundamental task of reviewing science and technology.

Topics

Whilst it was generally agreed that the life sciences are advancing rapidly, several project participants noted that individual fields may not be advancing at a pace that warrants annual attention. In this regard, repeatedly examining specific areas of science and technology may not be the most efficient use of time and resources.

Participants offered several suggestions as to how to organise future discussions: some favoured a comprehensive review of all potentially relevant developments in science and technology; others suggested a theme or topic linked to intersessional agenda items; yet others proposed looking at different topics each year.

A number of topics, many of which are interlinked, were put forward, including: science relating to diagnosis, detection and prevention including vaccine development and production technologies; synthetic biology; science related to potential means of delivery; biosensors; nanotechnology; and bioforensics as applied to microorganisms, plants and animals. A need to examine issues of availability and new utilities of technologies was also noted as important.

It was suggested that a thematic approach, which looked at science and technology in relation to 'investigations' or 'assistance', could be a useful means of bringing perspective into the discussion of certain areas and provide a less abstract, more applied, link to the operation of the BWC.

Objectives of S&T reviews

It is possible that this broad range of proposed topics can be explained by differences in participants' perceptions as to why more frequent examinations of science and technology are needed. Participants provided a range of interesting responses to the question of 'why bother reviewing science and technology?' including the following:

The purpose is to identify S&T developments requiring collective action with a view to strengthening the Convention's regime banning BW.

In order to maintain confidence and a level playing field it is important to keep an eye on what is going on so capability can be better assessed.

We don't want to do anything stupid and must protect the treaty from doing anything dumb.

We need [science and technology] reviews as a warning of challenges to the regime. Science and technology is also a good way to enter into the debate around contested areas and enter into science diplomacy.

Although the mandate for quinquennial reviews is outlined in Article XII, this does not necessarily determine the mandate for a more frequent process of examining S&T. States Parties will need to decide whether a more frequent examination will adopt the same approach or something different.

Agreement as to the objectives of increasing the frequency of science and technology discussions will greatly assist States Parties in determining how best to organise future examinations.

Participation

There was strong support for any future discussions regarding science and technology being open to all States Parties. Some participants thought that organising discussions around general themes related to the Convention (e.g. detection, assistance, investigations) might encourage active participation by a large number of states.

There was unanimous support for some form of involvement by members of relevant science and industrial communities. One reason given for this was to broaden and deepen the engagement with the scientific community that has been occurring during the intersessional process. However, views converged around the idea that outside experts should track developments in science and technology rather than be asked to review the implications of those developments for the Convention.

For those who did see the benefit of using future discussions of science and technology as a method of deepening the dialogue between States Parties and the scientific and industrial communities there was no agreement as to how such involvement might occur. Some participants preferred direct participation between scientists

and State Party technical experts during intersessional meetings. Two options were proposed by those favouring this method: that representatives from science and industry might sit alongside State Party technical experts on working groups; or that experts would be invited to participate on an ad hoc basis according to the subject of the discussion.

Other participants preferred a less direct method of engagement whereby examination of science and technology was conducted by a group independent of States Parties and chosen from candidates submitted by internationally recognised bodies. Yet another proposal was to continue with technically focused meetings, organised outside of the BWC intersessional process, such as the Beijing 2010 meeting.³ The small breakout group discussions at this meeting were considered particularly valuable. Those supporting these last two approaches did not agree on how any resulting reports might be brought to the attention of all State Parties, nor how these options would be funded.

It was noted by some participants that the role of a leader or chairperson could be important in focusing, framing and facilitating a more frequent examination of science and technology.

Output

Participants believed that any future discussions about science and technology developments should be technical in nature. As such, communicating the substance of technical discussions to delegations was considered an important task to get right.

Modest adaption to the format of most science and technology papers tabled at past Review Conferences was considered one way in which communication could be improved. Rather than being organised under technology headings, the majority of those with experience of BWC matters believed that a report organised to include a section, at either the beginning or the end, detailing how the particular advances relate to the operation of relevant Articles of the Convention would be most effective. Participants also agreed that a written summary of any discussions would be of value and that material generated by

³ NRC (2011) *Life Sciences and Related Fields: Trends Relevant to the Biological Weapons Convention*, available at: http://www.nap.edu/catalog.php?record_id=13130.

'groups' could be used as background material for the comprehensive review of science and technology at future Review Conferences.

There were strong views that this report should detail divergent opinions and areas of disagreement. Those of our participants who were trained in science emphasised that disagreement is a healthy aspect of scientific discourse, and contrasting scientific views should to be brought to the attention of diplomats so as to assist in sound and reliable decision making. One way this might be done is by permitting dissenting voices to explain their position in an annex to a report. This option is, for example, used by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) for the Convention on Biological Diversity. In 2011, they agreed that:

Where divergent views are put forward during the discussions... and if a consensus cannot be readily reached, the meeting will not attempt to negotiate an agreed consensus but instead present these divergent views in the form of options or alternatives with their rationales for consideration by the Conference of the Parties.⁴

Increasing the frequency with which science and technology advances are examined for relevance to the BWC will make communication of technical discussions to an audience that includes non-technical members an essential task, especially if, as proposed by some participants, reports might also contain recommendations for consideration by States Parties. The sorts of recommendations that are common in other policy domains include: recommending continued observation; tasking further study; and recommending increasing dialogue between different stakeholders.⁵

Given the relevance of science and technology to a broad number of Articles, including those relating to assistance and national implementation, these sorts of recommendations could facilitate substantive and procedural progress during a future intersessional process by promoting focused, yet holistic examination of topics of importance to States Parties.

⁴ Note by the Chair. *Organization of work: Improving the scientific, technical and technological debate during the fifteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA)*, Montreal, 7-11 November 2011.

⁵ Extracted from reports of the 15th and 16th sessions of the Scientific Advisory Board available at: <http://www.opcw.org/>

Points for the Seventh Review Conference

The Seventh Review Conference is a unique opportunity to enhance the framework whereby science and technology of relevance to the Convention are assessed in future. The following points may be useful to consider in this regard:

Frequency	There was near unanimous agreement (96%) from project participants that the frequency of S&T reviews should be increased, with a majority of participants favouring some form of annual approach as part of a future intersessional process.
Scope	All participants agreed that advances in S&T have both positive and negative implications for the BWC and therefore may be of relevance to a number of Articles of the Convention, as well as Article I. These might include Articles III, IV, VI, VII and X.
Objectives	Participants had different perceptions as to why reviewing science and technology is an important task for BWC States Parties. Agreeing a purpose will assist in determining the best approach to organising future assessments.
Participation	There was strong support amongst participants for engaging with members of the scientific community in the tracking of advances in relevant areas of science and technology, although less consensus on how this should be achieved or funded.
Output	It was thought that the report should include any divergent opinions and minor recommendations for States Parties to consider.

This note is part of a Harvard Sussex Program project examining the role of S&T reviews within the BWC and options for change. The project is funded by the UK's Economic and Social Research Council and is part of the RCUK Global Uncertainties Programme.

For more information about the project visit <http://hsp.sussex.ac.uk/sandtreviews/>

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