

So you want to do 'something' on Science and Technology reviews in the Biological Weapons Convention?

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In our 2010 Pugwash discussion paper we suggested that whilst States Parties agree on the need to do something in relation to S&T reviews, there was less clarity on exactly what was required to enhance the examination of science and technology under the BWC. This paper draws on the data collected as part of a Harvard Sussex Program (HSP) led project on examining the role of science and technology reviews in the BWC and will provide an overview of some of our key findings.²

Article XII of the BWC stipulates that: "Five years after the entry into force ... a conference of States Parties to the Convention shall be held... to review the operation of the Convention, with a view to assuring that the purposes of the preamble and the provisions of the Convention ... are being realized. Such review shall take into account any new scientific and technological developments relevant to the Convention"³. As our previous paper indicated, at all of the past Review Conferences national science and technology papers have been submitted.⁴ The majority of these papers primarily focused on the capacity of developments in S&T to destabilise, rather than enhance, the Convention, and, where discussion at a Review Conference did take place, it did so primarily in relation to Article I.

Since at least 1979, statements have been made by States Parties regarding the manner in which S&T is reviewed in the BWC context. These statements are not specific to a particular country or region; indeed, either through national or affiliation to a group statement, the majority of States Parties to the BWC have referred to the need to change the process by which the review of BWC-relevant science and technology is performed.⁵ During the preparation for the Seventh Review Conference, references to doing 'something' on S&T have been made in advance copies of working papers from countries as dispersed as Australia, Japan and New Zealand; India, the UK, the US, South Africa and China, as well as in meetings, such as the Wilton Park Clingendael workshop in September 2011.⁶ Together, these statements, workshop discussions and advance papers suggest that there is convergence around doing 'something' during the 7th Review Conference in relation to reviewing S&T. Convergence also appears to be forming around establishing some form of 'group' structure.

Over the past 18 months, we have been gathering data, via interview and questionnaire. 88 individuals participated, including past and present members of delegations from 16 BWC State Parties (all UN regional groups are represented), leading scientists, and representatives of international organisations, civil society and academia.⁷ This paper presents some of their views.

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² This project is being funded by the UK's Economic and Social Research Council and is part of the RCUK's Global Uncertainties programme.

³ The language used borrows from two contemporaneous arms control agreements of the 1960s, specifically Article VIII of the NPT and Article VII of the Seabed Treaty (SBT). See Caitriona McLeish "Reviewing scientific and technological advances within the Biological Weapons Convention: the first 30 years", 52nd ISA Annual Convention, Montreal, Quebec, Canada.

⁴ Caitriona McLeish and James Revill "Reviewing science and technology in the context of the Biological Weapons Convention" 31st Workshop of the CBW Pugwash Study Group, Getting Ready for the Seventh BWC Review Conference in 2011, Geneva, Switzerland, 4-5th December 2010

⁵ James Revill, Kai Ilchmann, Caitriona McLeish & Paul Nightingale (2011) "Proposals for changing the S&T Reviews",

[http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/24535CC97ADEC18C125787600383A18/\\$file/Revill+et+al+-+Proposals+for+change.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/24535CC97ADEC18C125787600383A18/$file/Revill+et+al+-+Proposals+for+change.pdf)

⁶ For a report on the meeting see [http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/5054E20BD268B30CC125794200319DA4/\\$file/wp1124-report.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/5054E20BD268B30CC125794200319DA4/$file/wp1124-report.pdf)

⁷ Twenty five States Parties were contacted

Why bother?

Various perceptions of why S&T reviews should be conducted were expressed by participants in the HSP led project. The most frequently cited objective of the process was to “keep abreast of developments in order to avoid the misuse of microorganisms, pathogens and other S&T developments”.⁸ However, there were a number of other interesting objectives identified including: S&T reviews as a means of ensuring national implementation was being undertaken in an appropriate manner or facilitating the implementation of cooperation and assistance mechanisms and ‘getting into science diplomacy’;⁹ S&T reviews as a means to engage and raise awareness-raising amongst scientists¹⁰; and S&T reviews as a possible means to return to a discussion about verification through some form of VEREX 2.0 process.¹¹

The objective of the S&T review process under Article XII is ensuring that States Parties keep abreast of developments in science and technology of relevance to *the operation* of the Convention. However, a more frequent examination of S&T does not necessarily need to have the same objective. Determining clear objectives for future examination will be essential to informing the most suitable approach.

What do we want?

A number of models were forwarded by participants as approaches that some form of intersessional BWC S&T review process could learn and/or borrow from. The most frequently mentioned model of S&T advice was the CWC’s Scientific Advisory Board (SAB). A direct transfer of this model into the BWC policy context was largely rejected by participants because of structural differences between the Conventions. Nonetheless, it was noted by some participants that there are positive aspects of the SAB which BWC States Parties should be aware of, such as inviting experts to present on topics and the structure of their reports, which include minor recommendations, e.g. for further discussion.

Project participants converged around the idea of developing some form of ‘group’. Variations on the group concept can be identified: some participants used the term “task group”, others, “working group”, yet others “open-ended working group”, yet others still, “temporary working group”. It is possible that this is just semantics but it may also indicate conceptual differences. As in the advance papers, project participants converged around a ‘group’ being open to all States Parties. Depending on how the discussions are organised what is likely to occur is that a group would become self-selecting, based on perceived levels of interest and expertise. The group might be fluid in nature, drawing on different experts to deal with different issues, but there is likely to be a core of active participants that will lead the translation of technical findings into policy-relevant implications.

When do we want it?

Whilst it was accepted that the Review Conference S&T reviewing process should continue, there was near unanimous agreement (96%) that more frequent reviews are needed. More frequent consideration of S&T was seen as a valuable additional and complementary activity to the comprehensive Review Conference related S&T reviews and required because of the pace of advances in relevant areas of science and technology. This is also consistent with advance copies of working papers dealing with this issue. However, a number of participants pointed out that a specific area of science is unlikely to change on a daily, weekly or even annual basis so repeatedly reviewing single topics is unlikely to be valuable. Several participants proposed looking at different areas of S&T on an annual basis; others proposed a thematic approach where S&T discussions would be linked with general intersessional agenda items or other important themes for the operation of the Convention. This approach was thought to encourage more grounded discussions on science and technology.

Below we arrange some of our participants’ suggestions under these two organisational ideas of topics and themes:

- A topical approach: States Parties could consider either looking at discrete topics or several naturally linked topics. Topics proposed included: 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

⁸ Participant 82

⁹ Participant 63

¹⁰ Participant 21

¹¹ Participant 28

microorganisms, plants and animals. Participants also thought that new utilities of technologies and availability issues would be an important topic

- A thematic approach: States Parties could consider looking at developments in science and technology in relation to important operational aspects of the Convention. Participants' proposals might be organised under the following broad themes: science and technology relating to attribution (including forensics); science and technology relating to protection; and science and technology in support of assistance to States Parties and victims of a biological weapons.

Irrespective of whether a topical or thematic approach was favoured, there was unanimous agreement that both the positive and negative implications of S&T developments need to be considered.

Who do we want to do this?

It was broadly recognised that States Parties, with support from the ISU, must continue to take responsibility for reviewing S&T as part of their guardianship of the Convention. Moreover, a number of participants argued that government scientists on BWC delegations in Geneva were best placed to understand both the science *and* the implications for the Convention. At the same time, there was unanimous support for the idea that external participation from the scientific and industrial communities would be important in future examinations of S&T, not least because they are better placed to inform diplomats of the potential implications of their work, both good and bad.

Whilst there was support for bringing in the scientist, there was less agreement on how this should be achieved. One option identified was to invite external experts to participate in whatever structure is established. A second option favoured by a number of participants was the use of international scientific organisations as a means to arrange some form of external technical discussion amongst scientists with participation from interested States Parties. There is some precedent for these sorts of meetings in the work on chemical issues¹² and, in the BW context, the work of the Inter Academy Panel (IAP) most recently in the 2010 Beijing meeting.¹³ Some participants suggested the breakout groups in these sorts of meetings were particularly useful opportunities for an exchange between scientist and policy experts. Those supporting this approach 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.

What do we want to see coming from this?

Participants agreed that any future discussions about science and technology developments should be technical in nature. This immediately raises the importance of communicating complex technical discussions to all diplomats, especially those without a scientific background. One means of achieving this identified by participants was to separate reporting technical discussions from policy implications of relevance to the Convention (and perhaps, recommendations). Thus, a future report could contain a comprehensive account of the technical discussion, including areas of disagreement (see below on consensus) supported by any technical information submitted to the discussion, and a policy-orientated section, which presented implications and, where there was consensus, minor recommendations. It is worth pointing out that in other policy domains, proposing minor recommendations for consideration is the norm. The sorts of recommendations found in other reports include: the need for further discussion on a topic in subsequent meetings and the need for further monitoring. The inclusion of minor recommendations provides a means whereby States Parties can generate a degree of continuity and focus in discussions on science and technology and build on progress in the current Intersessional Process set up.

Anything else we need to think about?

There are a number of other points that warrant consideration if States Parties are serious about doing something on S&T. Based on the HSP project experience and thinking, it may be useful to think about the following points.

- **Pervasiveness of S&T:** Science and technology is pervasive in both the substance and the process of the BWC's evolution and has a direct affect - positively and/or negatively - on the implementation of the Convention. For example, developments in scale-up and production techniques can affect whether CBMs

¹² See the work of the IUPAC.

¹³ See 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

are providing the appropriately relevant information; particular aspects of national implementation are influenced by the changing nature of scientific research and trends in collaboration, such as through increased use of communication technologies, e.g. the internet. In this regard, the relevance of S&T can be neither overstated and discussions cannot occur in a silo. The pervasiveness of S&T should be considered when thinking further about the interconnectedness of groups or tracks of activities.

- **Leadership:** A number of proposals emerging from meetings such as Wilton Park and in the advance papers of States Parties explicitly reference a "Chairperson" or "Task Group leader." The issue of leadership was also raised in several project interviews, with one participant suggesting the role of the chair would be "critical" to the success of any future discussions.¹⁴ Should States Parties agree to a chairperson or some equivalent role, there are a number of important tasks that could be assigned to that position to help ensure success including: framing the discussion; ensuring the provision of relevant information; managing the process; building consensus and reporting the discussions.
- **Consensus:** Those of our participants who were trained in science emphasised that disagreement is a healthy aspect of scientific discourse and this ought to be brought to the attention of diplomats to assist in sound and reliable decision making.¹⁵ In this regard, States Parties should not assume that a genuine technical discussion will always produce a consensus view.
- **Time allocations versus expectations:** It will be useful to maintain "ambitious realism" when considering what can be expected from more frequent S&T discussions. Suggestions have been made to use more frequent examination as a means to undertake additional tasks, such as providing resources to raise awareness and educate members of the scientific and industrial communities about the BWC; educate diplomats about science; and/or facilitate international cooperation and networking between scientists.¹⁶ Such additional tasks are important issues in their own right. Whilst they logically connect, their association with more frequent discussions on S&T should not detract or distract from the monitoring of S&T. S&T is at the core of so many aspects of the Convention that it will be important not to overload discussions on developments and implications of S&T with too many additional tasks. Our concern is that with limited time allocations, overloading the expectations of these S&T discussions will result in no task being done well.
- **Sources of information:** To encourage a range of views on specific aspects of S&T there are a number of means of encouraging the collection and collation of information. In addition to what has become the standard of submitting working papers, developing ISU background materials and soliciting the contribution of experts, it might be useful to also consider the role of non-papers from a chair so as to frame thinking. In addition, continuing the thinkzone approach could be employed as a means to provide a further space for outside experts, particularly experts from industry, biosafety associations and academia, to present different perspectives and relevant literature as it is published.
- **Costs:** The costs of meetings such as the IAP meeting in Beijing are estimated at \$250,000 - 300,000; travel and accommodation for experts coming for some form of working group discussion could also generate additional costs. Both these factor will need to be considered.

Conclusion

There appears to be support for doing something on S&T and the Seventh Review Conference represents a unique opportunity to chart a course for the future of the Convention in which S&T assumes a position commensurate with its importance in terms of both the substance *and* the process of the BWC. Some of the points raised in this paper do not necessarily require immediate attention and dealing with the minutiae at the Review Conference may not be the best use of time. However, these points do necessitate some consideration so that any language agreed at the Review Conference will ensure that the full potential of more frequent S&T examination is realised.

Our project on S&T Reviews does not end at the Review Conference. We continue to work in this area, with funding until at least April 2012. We will continue to update our website <http://hsp.sussex.ac.uk/sandreviews> with papers and discussion documents and stand ready to assist State Parties in any way we can.

¹⁴ Participant 55

¹⁵ The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) for the Convention on Biological Diversity for example has stated 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."

¹⁶ See for example materials from the seminar on "Outlook and Perspectives for the BTWC Seventh Review Conference" Berlin, 9-10 June 2011; UK (2011) "Illustrative Model Intersessional Work Programme: Task Group Structure and Agenda Items". On the need to educate diplomats, see Participant 62