

**Meeting of the States Parties to the Convention
on the Prohibition of the Development,
Production and Stockpiling of Bacteriological
(Biological) and Toxin Weapons and on Their
Destruction**

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Items 7–10 of the provisional agenda

**Standing agenda item: cooperation and assistance,
with a particular focus on strengthening cooperation
and assistance under Article X**

**Standing agenda item: review of developments in the
field of science and technology related to the Convention**

Standing agenda item: strengthening national implementation

Biennial item: how to enable fuller participation in the

Confidence-building Measures (CBMs)

**Synthesis of considerations, lessons, perspectives,
recommendations, conclusions and proposals drawn from the
presentations, statements, working papers and interventions
on the topic under discussion at the Meeting of Experts**

Submitted by the Chairman

1. To avoid repetition, this document focuses on new material introduced at the 2013 Meeting of Experts, and does not include concepts that appeared in the 2012 synthesis (see BWC/MSP/2012/5, Annex I).

**I. Cooperation and assistance, with a particular focus on
strengthening cooperation and assistance under Article X**

**A. Challenges and obstacles to developing international cooperation,
assistance and exchange in the biological sciences and technology**

2. Recognizing the importance of overcoming challenges and obstacles to international cooperation, assistance and exchange in the biological sciences and technology, States Parties should work together to:

(a) Remove any unjustified restrictions on the development and exchange of technology, materials and equipment needed to promote capacity building in the fields of sanitary control, detection, diagnosis and control of infectious diseases;

(b) Pursue a global, systematic and long-term approach to the provision of cooperation and assistance;

- (c) Help requesting countries to provide a thorough explanation of their needs and to define in specific terms the type of support that could best address those needs;
- (d) Encourage States Parties providing or receiving assistance to work across sectors within their governments to identify and address logistical, legal and regulatory barriers to the sharing of international assistance and to create a legislative and regulatory environment that facilitates exchange;
- (e) Strengthen the utilisation and improve the operation of the cooperation database established by the Seventh Review Conference, including by considering opening it to wider public access;
- (f) Harness the recent advances in enabling technologies in order to strengthen the sustainable development of States Parties, taking into account humanitarian considerations and the needs of developing countries in meeting health-related challenges;
- (g) Leverage existing bilateral and multilateral partnerships, and create new ones, to better coordinate plans and develop joint solutions to the challenges in exchange of assistance during public health and medical emergencies;
- (h) Encourage the private sector to play a greater role in ensuring both innovation and access.

B. Measures for the full and comprehensive implementation of Article X taking into account all of its provisions

3. Recognizing the importance of the full and comprehensive implementation of Article X, States Parties should work together on practical measures to improve implementation, including:

- (a) Developing more precise criteria on which cooperation and assistance activities what fall under the BWC and which do not;
- (b) Facilitating implementation of Article X by strengthening implementation of Article III, while ensuring that factors such as lack of technical capability in developing countries are not used to hamper international cooperation;
- (c) Providing open and transparent reporting of activities of States Parties in transferring knowledge, information, technologies, materials and equipment designed to combat infectious diseases, irrespective of their funding sources;
- (d) Discuss compulsory licensing, in consultation with the World Intellectual Property Organization (WIPO) and the World Health Organization (WHO), as a means of overcoming obstacles to provision of medicines to developing countries.

C. Ways and means to target and mobilize resources

4. Recognizing the fundamental importance of mobilizing sufficient resources to facilitate assistance and cooperation, in particular from developed to developing States Parties and from international and regional organizations and other relevant stakeholders, States Parties should:

- (a) Promote international cooperation that is not limited to financial resources but also includes the exchange of information, experiences, lessons learned, good practices and technical knowledge;

(b) Explore different ways of cooperation, including triangular, South-South, North-South, South-North and North-North;

(c) Submit clear, specific, and timely national reports on implementation of Article X as agreed at the Seventh Review Conference, and consider whether a comprehensive electronic database for international cooperation in the context of Article X could play a useful role in mobilizing and targeting resources.

D. Education, training, exchange and twinning programmes and other means of developing human resources

5. Recognizing the value of twinning programmes and other means of international exchange in education and training for strengthening cooperation among States Parties, for capacity-building and sharing of advanced expertise in developing countries, and for improving global capacity for disease detection and control, States Parties should develop and facilitate such programmes, including by:

(a) Ensuring that visa and other administrative requirements are proportionate, fair and efficiently administered;

(b) Sharing results of advanced research in life sciences so that scientists, engineers, students and teachers in developing countries are aware of opportunities and can take full advantage of new developments in biological sciences and technology.

E. Capacity-building through international cooperation

6. Recognizing the importance of capacity-building through international cooperation in biosafety and biosecurity, and for detecting, reporting, and responding to outbreaks of infectious disease or biological weapons attacks, including in the areas of emergency preparedness, response, management, and mitigation, States Parties should work to build capacity and reduce inequalities between developed and developing countries in the life sciences and related technologies, including by:

(a) Facilitating the transport, entry, exit, processing and disposal of biological substances and diagnostic specimens, reagents and other diagnostic materials for public health response purposes;

(b) Maintaining constant international surveillance and preparing further contingency plans to deal with emerging infectious diseases such as H7N9 influenza;

(c) Developing international capacity to provide urgent assistance, including testing systems and diagnostic equipment, means of specific and general immunization, biological environmental monitoring devices, and advice and expert assistance;

(d) Providing assistance with logistic challenges related to storing and dealing with pathogens, development of scientific research capacity and training of national specialists.

F. Coordination of cooperation with other relevant international and regional organizations, and other relevant stakeholders

7. States Parties recognized the importance of coordination with relevant international and regional organizations and other relevant stakeholders, specifically:

- (a) Fostering closer collaboration and synergy between States Parties and international organizations such as INTERPOL and the World Customs Organization;
- (b) Closer cooperation and coordination between the WHO and BWC in order to build an integrated approach on biosecurity and biosafety;
- (c) Strengthening the role of the Convention as a mechanism that coordinates BWC-related assistance that is provided through other formats.

II. Review of developments in the field of science and technology related to the Convention (focusing in 2013 on advances in technologies for surveillance, detection, diagnosis and mitigation of infectious diseases, and similar occurrences caused by toxins in humans, animals and plants)

A. New science and technology developments that have potential for uses contrary to the provisions of the Convention

8. States Parties identified a number of developments that have potential for uses contrary to the provisions of the Convention, including:

- (a) In vaccine development, knowledge gained through research on the pathogenicity of the disease agent and the host immune response could be exploited for harmful purposes;
- (b) Advances in technologies that make vaccine production simpler, faster, cheaper and more efficient also have the potential to be used for biological weapons agent production;
- (c) Concepts developed to deliver vaccines to specific cell types could also be used to design delivery platforms for harmful materials.

9. Recognizing the importance of preventing any misuse of new science and technology developments, States Parties should work together to:

- (a) Develop and promote appropriate oversight and biosafety/biosecurity measures, including through international cooperation, capacity-building and strengthened implementation of Article X;
- (b) Involve a wide range of national and international stakeholders in discussing responses to dual-use research of concern;
- (c) Ensure that measures taken to mitigate biological risks are proportional to the assessed risk and do not hamper legitimate peaceful activities including international cooperation;
- (d) Consider the implications of the convergence of biology and chemistry.

B. New science and technology developments that have potential benefits for the Convention, including those of special relevance to surveillance, detection, diagnosis and mitigation of infectious diseases

10. States Parties identified a number of developments in surveillance, detection and identification and diagnosis that have potential benefits for the Convention, including:

(a) New methods for direct detection of the presence of bacteria (such as immunological methods, molecular probes, and amplification of nucleic acids) and of viruses;

(b) Faster and less expensive high-throughput DNA sequencing, along with parallel advances in computational biology, which together can be used for identifying unknown pathogens, outbreak sources and animal reservoirs;

(c) Rapid point-of-care diagnostics suitable for use in low-resource environments to provide quick assessment of disease outbreaks, such as lateral flow immunoassays and new techniques emerging from multidisciplinary collaborations that combine different approaches into simple devices;

(d) Advances in microfluidics and nanotechnology which may aid point-of-care diagnosis of several diseases;

(e) Advances in metagenomics, which can be used for identifying unknown viruses or bacteria by subtracting human sequences and focusing on known or novel microbial sequences.

11. States Parties identified a number of developments in disease response, investigation and mitigation that have potential benefits for the Convention, including:

(a) Advances in vaccine development, allowing the identification of new targets and reducing the timescale for development;

(b) Innovations in traditional vaccine production methods, including single-use or disposable bioreactor systems, which can increase yield, cost-effectiveness, portability and safety;

(c) New vaccine production methods, including cell cultures and cell suspension bioreactors, recombinant DNA metabolic engineering and synthetic biology, chemical peptide synthesis; and transgenic animals and plants;

(d) Advances in vaccine distribution and delivery, such as encapsulation in silk matrices, nano-vesicles, and nanotechnology-based patches;

(e) Advances in forensic epidemiology, such as comparative genomics, which would be of great utility in investigation of alleged use of biological weapons.

12. Recognizing the importance of ensuring that the potential benefits to the Convention are realized, States Parties should work together to:

(a) Promote wide access to and use of these technologies, including through the development of inexpensive and field-portable implementations;

(b) Support the full and open exchange of scientific knowledge and technology, especially between developed and developing countries.

C. Possible measures for strengthening national biological risk management

13. Recognising that the dual-use nature of some life sciences research requires thoughtful approaches to maximize benefits and minimize risks of accident or misuse, States Parties should work together and with all relevant stakeholders to develop measures to mitigate biological risks. Such measures should be proportional to the assessed risk, take into account national circumstances, and not hamper activities necessary for prophylactic, protective or other peaceful purposes. They could include:

(a) The elaboration of common principles on the basis of which risk assessment and oversight of scientific research activities that have dual-use potential should be carried out during all phases of the research cycle;

(b) The development of oversight frameworks for dual-use research of concern, involving a broad range of stakeholders at the national and international levels;

(c) Continuing discussion within the Convention on specific instances of dual-use research, in order to consider relevant research trends early rather than post facto.

D. Science- and technology-related developments relevant to the activities of multilateral organizations

14. Recognizing the close links and the areas of common interest between the BWC and the Chemical Weapons Convention (CWC), States Parties noted that:

(a) There may be lessons for the review of science and technology under the BWC from the experience with the Scientific Advisory Board of the CWC;

(b) There is a need for greater interaction between the experts that are involved in the CWC and those involved in the BWC, particularly in the context of the convergence of biology and chemistry, and education and awareness-raising on the respective treaties and dual-use issues.

E. Other science and technology developments of relevance to the Convention

15. Recognizing the importance of thoroughly and effectively reviewing science and technology developments relevant to the Convention, and of keeping pace with rapid changes in a wide range of fields, States Parties should consider ways of establishing a more systematic and comprehensive means of review. Possibilities could include:

(a) A board to provide science advice, similar to the Scientific Advisory Board of the CWC, or based on a different model;

(b) An open-ended working group to consider the implications of advances in science and technology, including the convergence of chemistry and biology;

(c) A requirement that whenever there are national or international meetings addressing science and technology developments, a summary should be prepared on the implications for the BWC, and submitted by the hosting State Party.

III. Strengthening national implementation

A. Specific measures

16. States Parties identified specific measures for the full and comprehensive implementation of the Convention, especially Articles III and IV, including:

(a) Ensuring that national legislative frameworks cover definitions, prohibition of certain activities, extraterritorial application, national biosafety and biosecurity measures, transfer controls, and legislative enforcement;

(b) Ensuring that national implementation covers both *prohibition* and *prevention*.

B. Ways and means to enhance national implementation, sharing best practices and experiences

17. Recognizing the importance of enhancing national implementation, sharing best practices and experiences, enforcement of national legislation, strengthening of national institutions and coordination among national law enforcement institutions, States Parties should work towards:

- (a) Identifying in more concrete terms the specific areas that need to be covered by implementation activities;
- (b) Gathering information on the status of implementation and the needs of States Parties, including through reports of cooperative endeavours such as regional workshops or peer reviews, and national surveys such as those conducted by the Verification Research, Training and Information Centre (VERTIC);
- (c) Complementing and integrating WHO-based provisions with BWC-based provisions, and enhancing partnerships between experts in biosecurity/non-proliferation and public health;
- (d) Developing new methods of sharing experiences and best practices for national implementation, such as voluntary peer review mechanisms;
- (e) Improving coordination and cooperation among national government agencies involved in various aspects of BWC implementation, through forums, committees or other structures;
- (f) Actively sharing with all States Parties information regarding potentially controversial scientific research and/or biodefence activities.

C. National, regional and international measures to improve laboratory biosafety and security of pathogens and toxins

18. Recognizing the importance of measures to improve laboratory biosafety and security of pathogens and toxins, States Parties should work together to:

- (a) Promote regulations that restrict at the national level possession, use and transfer of potentially dangerous biological agents and toxins;
- (b) Promote oversight of pathogens on the national level, by harmonizing and updating biosafety standards and guidelines, and clarifying and updating biocontainment requirements.

D. Any potential further measures, as appropriate, relevant for implementation of the Convention

19. Recognizing the importance of building international confidence in the full implementation of the Convention, States Parties considered a number of possible approaches to demonstrating their compliance with the national implementation obligations of the Convention, including:

- (a) A non-discriminatory, legally binding agreement, including on verification, dealing with all articles of the Convention in a balanced and comprehensive manner;
- (b) Detailed annual or periodic reporting on national implementation;

- (c) Providing information and regular updates to the Implementation Support Unit's National Implementation Database and to the Security Council Resolution 1540 Committee;
- (d) Voluntary peer review processes on national implementation or compliance assessment;
- (e) Hosting visits to biodefence or other facilities in order to build an environment of openness and collaboration in national biodefence;
- (f) Conducting national biodefence conferences with open access to representatives of all States Parties;
- (g) Making better and more systematic use of the Confidence-building Measures;
- (h) A mechanism to systematically review relevant developments in science and technology and assess their beneficial and/or detrimental impact on compliance, national implementation, investigations of alleged use, etc.

IV. How to enable fuller participation in the Confidence-building Measures (CBMs)

20. Recognizing the importance of the exchange of information among States Parties through the CBMs, noting that this provides transparency and builds trust among States Parties, States Parties should:

- (a) Demonstrate the relevance and clarity of purpose of the CBMs, and raise awareness of their utility and function;
- (b) Seek information from States Parties that do not participate regularly in the CBMs on the specific reasons they do not participate;
- (c) Consider what revisions to the concept and operation of the CBM process could be adopted at the Eighth Review Conference to ensure that the measures are useful, relevant and effective.

21. Recognizing the need to enable fuller participation in the CBMs and the technical difficulties experienced by some States Parties in completing full and timely CBM submissions, States Parties should work to find practical ways to improve participation, including by:

- (a) Developing an easy-to-use electronic CBM platform that would facilitate submission, retrieval and analysis of CBM information by States Parties;
- (b) Encouraging States Parties which have not yet submitted a CBM return, or which have done so only periodically, to report on the specific assistance they need;
- (c) Examining the financial and technical feasibility, benefits and implications of various means of making CBM submissions available in more UN languages;
- (d) Convening regional seminars and workshops to promote awareness of CBMs and to provide an opportunity for States Parties to report on their difficulties and needs for assistance;
- (e) Encouraging bilateral cooperation on CBMs and the provision of assistance, using the national point of contact list available on the ISU website;
- (f) Considering a "step by step" approach in CBM participation whereby States Parties submit CBM forms separately or one by one, as the information is collected.