BWC CONFIDENCE BUILDING MEASURES

Preparing for a comprehensive review of the CBM mechanism at the Seventh BWC Review Conference

2009-2010 workshop series report

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August 2010

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Executive Summary

Developing a dialogue on how best to revise the current CBM forms, and obtaining as many perspectives as possible on this, has been identified as a key priority in preparing for the comprehensive review of the CBM mechanism at the 2011 Review Conference of the Biological Weapons Convention.

To this end, the Geneva Forum in collaboration with the BIOS Centre of the London School of Economics, and together with the Governments of Switzerland, Norway and Germany, hosted a series of three workshops on options and proposals to revise the CBM mechanism. The first of these was held in Jongny-sur-Vevey on 22-23 August 2009, the second in Geneva on 12 December 2009, and the third in Berlin on 26-27 April 2010.

This report summarizes the workshop discussions, by, firstly, providing an extensive summary of the expert presentations made at each workshop and of the debates that ensued; and, secondly, reflecting on the broader themes and points of agreement that arose over the course of the three workshops. Key themes included the purpose of the CBM mechanism; the relatively low level of participation; the changing political, security and scientific contexts; improvements to the content of the existing CBM forms; potential procedural changes to the CBM mechanism; and the role of civil society.

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Introduction

The Confidence Building Measures (CBM) mechanism was set up to establish transparency and trust between States Parties to the Biological Weapons Convention (BWC) that no activities are taking place in contravention of the Convention. Developing out of the crisis of confidence among States that had resulted from unresolved allegations of non-compliance, rapid developments in science and technology and other pressures in the early 1980s, the CBMs were conceived, developed and agreed at a time when it seemed a verification mechanism was going to be put in place that resembled the declarations and on-site inspections of the Chemical Weapons Convention.

Much has changed since that time. A verification mechanism was never put in place for the BWC and is not currently within political reach. New threats, risks and security challenges have emerged since the end of the Cold War. Significant advances in the biological and life sciences, coupled with knowledge and technology becoming increasingly available, accessible and affordable, have increased the potential for misuse by a wider range and by a larger number of 'wrong hands.' New security actors have come in that claim an interest in the biological weapons problem – there are now not only groups associated with war, defence, international order and strategy involved, but also groups concerned with crime, internal security, public order and police investigations as well as groups concerned with medicine, healthcare and the life sciences. The nature and practice of diplomacy have also changed, from a model where participation was exclusive rather than inclusive, with diplomats acting as gatekeepers rather than facilitators, and with relations being hierarchical rather than network-based, to one that can be characterised as 'multistakeholder diplomacy' and which adopts a governance approach to regulation.

The biological weapons problem today is thus not about 'disarmament' or 'arms control' as traditionally understood, but is rather, as our colleague Jez Littlewood has noted, a "post-disarmament issue which requires 'management' or 'governance' by a collection of both connected and unconnected measures." It is therefore pertinent to revisit the role CBMs play in today's context and to reassess whether the current mechanism still represents the best way of increasing transparency and building confidence between States Parties.

The December 2008 Meeting of States Parties saw two side events dedicated to CBMs. The first of these, jointly hosted by Switzerland and the Geneva Forum, launched the final report of a Swiss study that focussed on the kind and quality of the information exchanged by States Parties on their CBM returns.[1] The second side event, jointly hosted by France and UNIDIR,

[1] The event, entitled "Preparing the Ground for the CBM Content Debate: What Information Builds Confidence" was held on Tuesday 2 December 2008 at the Palais des Nations. Richard Lennane, Head of the BWC Implementation Support Unit, provided an overview of the role of the ISU in strengthening CBMs. Filippa Lentzos explored whether, in practice, the information supplied on CBM returns enhances transparency and builds the necessary

provided a panel discussion on ways to increase the participation of States Parties in the CBM mechanism. [2] These side events provided the impetus for an informal roundtable discussion between a small number of like-minded States and civil society actors about strategies for continued work on CBMs in the lead-up to the 2011 Review Conference.

Developing a dialogue on how best to revise the current forms, and obtaining as many perspectives as possible on this, was identified as one of the key areas where further work would be particularly useful. It was felt that this should be a multilateral endeavour and that it would be helpful to convene a meeting of experts outside of the BWC intersessional process specifically for this purpose. To this end, the Geneva Forum in collaboration with the BIOS Centre of the London School of Economics, and together with the Governments of Switzerland, Norway and Germany, hosted a series of three workshops on options and proposals to revise the CBM mechanism. The first of these was held in Jongny-sur-Vevey on 22-23 August 2009, the second in Geneva on 12 December 2009, and the third in Berlin on 26-27 April 2010.

Drawing on representatives from governments, intergovernmental organisations, civil society and academia, these workshops brought together a range of experts to address key questions on: (1) the objectives of the CBM mechanism and the extent to which these have been achieved in practice; (2) the CBMs in relation to other compliance assessment mechanisms; (3) the format and content of the existing CBM forms, and (4) the effectiveness of the CBM collation and submission process. Throughout these workshops, the aim was to find solutions with the potential to increase both the quantity and the quality of CBM declarations.

While workshop participants identified a number of areas for improvement, it was the shared belief of all involved that CBMs remain an important aspect of the Convention. Thus, rather than proposing an overhaul of the CBM mechanism, workshop participants identified proposals aimed at fine-tuning it to more effectively capture the information desired by States Parties to build confidence in others' commitment to the Convention. At the root of this endeavour, and at the fore of the discussion, were the pragmatic questions: What information builds confidence? And, how can CBMs be improved to better communicate this information?

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degree of confidence between states parties. Reto Wollenmann, of the Permanent Mission of Switzerland to the Conference on Disarmament, took a longer-term perspective on CBMs and outlined some of the political work ahead. The event was chaired by David Atwood, Director of the Quaker UN Office in Geneva and Head of its Disarmament and Peace Programme.

[2] Building on the Tuesday side event, this event was held on Thursday 4 December 2008 and was entitled "Universalization of Confidence-Building Measures in the Biological Weapons Convention." Opening remarks were provided by Sophie Moal-Makame of the Permament Mission of France to the Conference on Disarmament and by Christiane Agboton Johnson, Deputy Director of UNIDIR. Presentations were given by Ngoc Phuong Huynh of the BWC Implementation Support Unit, Filippa Lentzos of the London School of Economics, and Angela Woodward of the Verification Research, Training and Information Centre. A summary of the debate following the presentations was provided by Elisande Nexon of the Fondation pour la Recherche Stratégique. The event had simultaneous interpretation in French and English.

In what follows we report in detail on the discussions had at these workshops, by, firstly, providing an extensive summary of the expert presentations made at each workshop and of the debates that ensued; and, secondly, reflecting on the broader themes and points of agreement that arose over the course of the three workshops.

Appended to the report is: A) the current set of agreed forms for CBM submissions; B) a compendium of all formal States Parties proposals and civil society recommendations on revisions to the current CBM forms stretching back to the Third Review Conference in 1991 when the forms were introduced; C) a best judgment document of common ground on technical revisions to the CBMs from the workshop series; and D) a list of participants who attended the workshops.

The CBM Mechanism

The aim of the CBM mechanism is to:

> strengthen the authority of the Convention and to enhance confidence in the implementation of its provisions… in order to prevent or reduce the occurrence of ambiguities, doubts and suspicions, and in order to improve international co-operation in the field of peaceful bacteriological (biological) activities.

The exchange of information through CBMs strengthens the regime of compliance by enabling States Parties to be transparent about their activities, facilities, unusual outbreaks and regulatory frameworks for implementing the Convention. Complete, accurate and annual declarations inspire the greatest amount of transparency and confidence by enabling national patterns of normal activity to be established.

Developing out of the crisis of confidence among States Parties that had resulted from the unresolved allegations of non-compliance, rapid developments in science and technology and other pressures in the early 1980s, CBMs were agreed at the Second Review Conference in 1986, elaborated at a meeting of scientific and technical experts in 1987, and modified and considerably expanded at the Third Review Conference in 1991. They have not been modified since, although the Sixth Review Conference agreed on various improvements to the mechanism for submission and distribution.

As agreed at the Third Review Conference, the CBMs consist of seven measures (A-G) that are to be submitted using agreed forms to the ISU no later than 15 April each year. The complete set of forms is available in Appendix A.

CBM A	Part 1: Exchange of data on research centres and laboratories Part 2: Exchange of information on national biological defence research and development programmes
CBM B	Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins
CBM C	Encouragement of publication of results and promotion of use of knowledge
CBM D	Active promotion of contacts
CBM E	Declaration of legislation, regulations and other measures
CBM F	Declaration of past activities in offensive and/or defensive biological research and development programmes
CBM G	Declaration of vaccine production facilities

In accordance with the decision of the Sixth Review Conference, the ISU is responsible for compiling and distributing the CBM returns to States Parties. The CBM returns are not publicly available (unless a State Party specifically requests that its return be made public) and no collective analysis of the

submitted data is carried out. The ISU does, however, provide a CBM submission summary report.

This summary report indicates that over the last twenty-odd years, the annual number of CBM submissions has been somewhere between 30 at its lowest (in 1987) and 65 at its highest (in 2007). Annual CBM submissions are thus made by substantially less than half, and often less than a third, of States Parties to the BWC. This relative lack of participation in the CBM process is particularly unfortunate as the mechanism will only command limited confidence until more States Parties honour their commitments and submit declarations. Indeed, ignoring the mechanism weakens the concept of CBMs and may ultimately reduce, rather than build, confidence among States. Non-participating States Parties are therefore strongly encouraged to take up offers of assistance in completing CBM returns from the ISU, the EU and individual States Parties.

The relative lack of participation in the CBM mechanism is compounded by inconsistent submissions, where States submit returns in some years but not in others. For example, 13 States Parties which submitted CBMs in 2009 have not yet done so in 2010.[3] Hopefully most of these will just be late submitters, but the trend suggested over the last few years is that some will simply not submit again in 2010. Completing the CBM forms can, of course, be a lengthy and difficult exercise, especially the first time it is done. Collecting the necessary information typically requires contacting several different government ministries and agencies. In larger countries, the necessary information may be held at a state or provincial rather than national level, further complicating the task. However, there is a wide perception that updating information annually takes a small effort once a State has already made the effort to collate and submit previous returns. It is not immediately obvious, therefore, why a State Party that has made previous returns or even a first return would not simply update its information in following years.

The CBM mechanism not only faces low and inconsistent participation, it is also challenged by incomplete submissions where only some of the seven forms are submitted. A notably bad year was 1991, for example, in which approximately half of the CBM returns submitted were incomplete. In other years somewhere between 15-25% of submissions are incomplete. Where forms are submitted, they are sometimes only partially filled out, or filled out with information that provides little transparency about national programmes and activities related to the BWC.

Chart 1 – taken from the Swiss 2007 study *National data collection processes for CBM submissions* – illustrates the annual number of CBM returns submitted and the proportion of these that are complete.[4]

[3] ISU website accessed 9 June 2010 and personal communication with ISU 9 June 2010.
[4] Four additional CBM returns were submitted for 2007 after the study went into print. The total number of CBM returns for 2007 is thus 65 and not 61 as indicated in the chart.

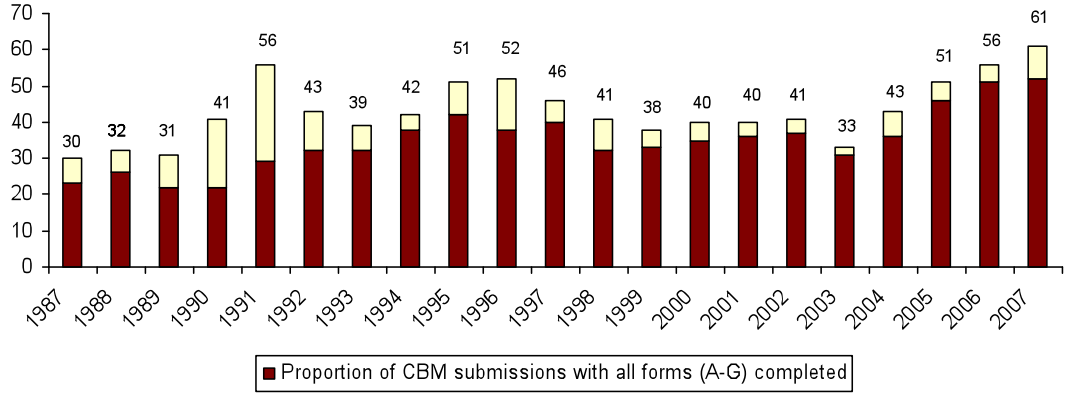

Chart 1: Number of CBM returns submitted by States Parties over the twenty-year timeframe 1987–2007 and the proportion of these containing all forms.

Many States Parties have emphasized a need to review the CBM mechanism and consider proposals to improve its deficiencies. The introduction of the Implementation Support Unit (ISU), agreed at the Sixth Review Conference in 2006, signalled a commitment by States Parties to strengthen the mechanism, as the ISU is explicitly tasked with administering the CBM process. Although the introduction of the ISU represents a significant step forward, there remains considerable scope for further improvement.

A compendium of all formal States Parties proposals and civil society recommendations on revisions to the current CBM forms is provided in Appendix B. The following sections summarize the workshop discussions of experts over the last year on the improvements they see necessary to the mechanism and the forms.

Workshop 1: Substantive Agenda

The first workshop was a residential workshop and took place on the 22nd and 23rd of August 2009 at the Centre de Formation du Léman, Jongny-sur-Vevey in Switzerland. The workshop was sponsored by Switzerland.

Session I: Contextualising the CBM mechanism
Chair: Riccarda Torriani

Plenary discussion:

- When the CBM mechanism was developed for the BWC, how was it conceived to fit within the broader context of compliance assessment and verification?
- What were the main considerations affecting the negotiations of the CBM modalities?

The plenary discussion was preceded by brief presentations from Nicholas Sims and Roger Roffey.

Plenary discussion:

- What have been the key strengths of the mechanism and what have been its key criticisms?

The plenary discussion was preceded by a brief presentation from Jez Littlewood.

Plenary discussion:

- How have the political, security, scientific and technological contexts changed in the twenty years since the CBM mechanism was introduced?

The plenary discussion was preceded by three short interventions from the floor.

Session II: Improving the quantity and quality of CBM submissions
Chair: Reto Wollenmann

Working Group discussions:

- How can the existing CBM forms, submission process, and data access management be improved?

There were three Working Groups, chaired by Volker Beck, Richard Lennane, and Lorna Miller.

Plenary discussion:

- What state party proposals and civil society recommendations have been made to date on revisions to the current CBM forms, and what is the value of these proposals?

The plenary discussion was preceded by a brief presentation from Alex Hamilton of the pre-circulated “Compendium of Proposals to Improve the CBM Mechanism”, and by feedback from the Working Group chairs.

Session III: Reconsidering the current CBMs
Chair: Silvia Cattaneo

Working Group discussions:

- If the measures were to be redesigned from scratch, what content would be covered?

The Working Group discussions were followed by feedback from the Working Group Chairs in plenary.

Session IV: Other elements of compliance assessment
Chair: David Atwood

Plenary discussion:

- What other compliance assessment mechanisms are at our disposal and how does the CBM mechanism fit with these?

The plenary discussion was preceded by a brief presentation from Angela Woodward.

Plenary discussion:

- How can civil society play a constructive role in increasing transparency and building confidence between states parties?

The plenary discussion was preceded by a brief presentation from Iris Hunger.

Session V: Moving forward
Chair: Reto Wollenmann

Plenary discussion:

- What role could/should the CBM discussion play at the 2011 Review Conference?
- How can we collectively facilitate a constructive CBM discussion and revision process?
- What needs to be prepared for the 2011 CBM discussion?
- What are possible outcomes of the 2011 Review Conference with regard to CBMs?

Summary, next steps and close
Chair: Knut Langeland

Workshop 1: Session Summaries

Session I: Contextualising the CBM mechanism

- ***When the CBM mechanism was developed for the BWC, how was it conceived to fit within the broader context of compliance assessment and verification?***
- ***What were the main considerations affecting the negotiations of the CBM modalities?***

Presentation by Nicholas Sims

The workshop series kicked off with a presentation by Nicholas Sims outlining the historical context within which the CBM mechanism was first agreed. Sims began his presentation by emphasizing that CBMs developed out of a crisis of confidence resulting from: (1) unresolved allegations of non-compliance in the Cold War context, (2) rapid developments in science and technology, particularly advances in recombinant DNA technology, and (3) other pressures in the early 1980s, including poor relations between the Soviet Union and the United States, during the so-called 'second Cold War.'

Sims noted that CBMs were agreed at a time when it seemed a verification system was going to be put in place that resembled the declarations and on-site inspections of the Chemical Weapons Convention (CWC). But, while some BWC delegations were confident that such an agreement would be reached between the mid-1980s and early 1990s, other delegations did not share this belief, and, in the end, an agreement was never reached. Between 1991 and 2001, verification again became a topic of intense debate, while CBMs were neglected, neither enhanced nor expanded, and ultimately left to fulfill a role for which they were not well suited.

Considering the question of where CBMs were conceived to fit within the broader context of compliance assessment and verification, Sims described CBMs as adding to a multi-layered regime of compliance, with the contingency mechanism under Article V forming the first layer, CBMs (under Article V and linked to Article X) the second, while the third, verification, is still missing. CBMs, as they were agreed in 1986 and later expanded in 1991, therefore remain the uppermost layer within the regime of compliance, suggesting all the more reason to strengthen them.

Sims then provided a detailed summary of the political context within which CBMs, and their modalities, were developed. In particular, Sims acknowledged the importance of the Stockholm Document of 19 September 1986 in intensifying the efforts of the BWC to agree on a CBM package – one that emphasized the importance of openness and cooperation through the exchange of information necessary to "build up a picture of the normal pattern of activity," reducing anxiety and building confidence.

Sims closed his presentation urging workshop participants to consider future steps that can be taken to strengthen the BWC. In particular, he pointed to the importance of the Accountability Framework (originally proposed by Canada), as a measure to run alongside CBMs, with the potential to organize collective scrutiny of compliance. Under this framework, he explained, it would be for each State Party to find a way to demonstrate compliance, which would then be reviewed at annual Accountability Sessions. In the absence of a verification system, Sims stressed, an Accountability Framework is vital, and should be adopted at the Seventh Review Conference.

Presentation by Roger Roffey

Roger Roffey's presentation also discussed the historical context within which CBMs were introduced, as well as the evolution of the CBM forms and some ambiguities and deficiencies of the CBM mechanism. Roffey began by highlighting that allegations of breaches of the Convention sparked the debate on international verification measures in the early 1980s. He also noted that the Swedish UN First Committee Resolution, agreed in 1982, helped lay the groundwork for CBMs, calling for a special meeting between States Parties to "establish flexible, objective and non-discriminatory procedures" to deal with issues concerning compliance with the BWC.

During his presentation, Roffey summarized CBM Forms A-D, agreed in 1986, and CBM Forms A-G, agreed in 1991, raising a number of questions about their intended purpose and the scope of the CBM regime. First, he emphasized that CBMs, in the BWC context, did not achieve the verification standard set by the CWC. Instead, they were developed as part of a politically binding compliance regime. Second, he emphasized that biodefence is central to the BWC, and to the CBM regime, but there is some ambiguity with regard to what should be included in this category. In particular, Roffey pointed to the blurring of lines between defensive and offensive research and development, and military versus civilian biodefence. Finally, he drew attention to the new challenges posed by rapid advances in biotechnology and the growing threat of bioterrorism.

Roffey included a number of proposals in his presentation, primarily aimed at improving transparency in the context of biodefence research and development. Drawing on a Swedish proposal made at the Third Review Conference, he emphasized the need for greater openness on sources of funding, annual budget, organizational structure and activities and equipment, particularly work on aerosols. Roffey closed with a call to initiate an informal meeting among States Parties to share information on current biodefence research and development activities and to find ways to improve the relevant CBM forms, including adding questions on codes of conduct and national oversight, as well as specifying the need to declare work "aimed at protection against the intentional use of biological agents and toxins" on CBM A, part 2.

Plenary discussion

Workshop participants expanded on a number of key points raised in the preceding presentations. It was suggested that CBMs remain useful, but should be updated to reflect the present political and security context, as well as scientific and technological advances.

It was acknowledged that CBMs were introduced in the Cold War context, i.e. at a time when the major superpowers – the Soviet Union and the United States – maintained a bipolar security environment. Since the end of the Cold War, the threat, or at least the perception of that threat, has changed. It was argued that in addition to state-state conflict it is necessary to consider state-non-state conflict, particularly the threat posed by terrorism. Questions were raised about the suitability of CBMs in today's context, such as: Do CBMs capture concerns about bioterrorism? Does the classical notion of bio*defence* address these concerns? Should there be an increased focus on bio*security*? How should these terms be defined?

It was also argued that rapid advances in biotechnology and information technology have increased the 'dual-use' threat, which should be addressed in revising CBMs. Over the last twenty years, advances in biotechnology have expanded the "tool kit" available to the life sciences, increasing the possibilities for deliberate misuse. Similarly, the information technology revolution has enabled greater access to information and knowledge that could be exploited.

Finally, a number of workshop participants underlined that it is important to recall and reinforce the purpose of CBMs. CBMs were generally understood as transparency measures intended to build confidence through the exchange of information relevant to the Convention. Thus, it is essential to identify what information matters most in today's context, answering the question: What information builds confidence?

- ***What have been the key strengths of the mechanism and what have been its key criticisms?***

Presentation by Jez Littlewood

Jez Littlewood's presentation outlined a number of strengths and weaknesses of the CBM mechanism, as well as highlighting some indicators, both positive and negative, which might suggest how the "comprehensive review" of CBMs will play out at the 2011 Review Conference.

Littlewood outlined the following strengths of the CBM mechanism: CBMs are a familiar aspect of the BWC, having existed for over twenty years; much of the information requested on CBM forms is still relevant in the BWC context; CBMs are state-led, adaptable and promote openness; CBMs are synergistic, providing a bridge between diverse reporting structures at the national, international and civil society level, and, finally, CBMs can be improved at a

low cost with positive impacts.

He then outlined the following weaknesses: CBMs were intended to be an interim solution, not a permanent fixture of the BWC; the CBM mechanism maintains an ambiguous relationship between Article V, on compliance, and Article X, on cooperation; CBMs are a bolted on "extra," having not been integrated into accountability, compliance or implementation frameworks, and, finally, CBMs provide partial transparency between states and are opaque to the outside world.

He then identified a number of positive and negative indicators that could influence the success of the CBM debate at the Seventh Review Conference. Among the positive indicators were: an interest on behalf of States Parties in CBMs and their further development; contributions made by civil society in preparation for 2011, and, finally, the fact that there is room for creativity and scope for improvement.

Among the negative indicators were: much work is required to prepare the ground for 2011; CBMs will only be one topic among many; resistance to change, and, finally, reluctance on the part of States Parties to challenge spurious reasons for non-submission.

Finally, he cautioned that it will be difficult to build consensus and take CBMs forward in 2011. There are expectations, and then there are realities. Decisions on CBMs are prone to political whims, can easily be rejected and there is a tendency towards an either/or dichotomy: either CBMs or verification, which might overshadow current efforts.

Plenary discussion

A number of general comments were made following this presentation, including the observation that it is difficult to change the status quo. Thus, improving the CBM mechanism will require strong political will, as well as sound proposals. CBMs were argued to have been neither a success nor a failure. The CBM mechanism was an interim solution that continued longer than expected. There was some concern that CBMs cannot live up to the expectations that the BWC demands of them. The question was posed: "Do CBMs actually build confidence?" One of the biggest weaknesses leveled at the CBM mechanism was that it lacks integration within the BWC framework. Despite these weaknesses, workshop participants expressed that there is scope for improvement. In particular, it was stressed that there is a clear opportunity to enhance the effectiveness of the CBM mechanism through increasing participation in the annual CBM information exchange. Irrespective of the content of the CBM forms, participation can, and should, be universal.

A number of specific comments were also made that identified weaknesses in the CBM mechanism and possible avenues for improvement. It was suggested that there is a lack of dialogue between States Parties on CBMs and a lack of review of CBMs. Another participant proposed that CBM declarations could take place every two years, as opposed to annual

declarations, providing more time to complete CBM submissions. A number of comments were also made concerning the question of non-state actors, the threat of bioterrorism, and the need for domestic legislation on biosecurity and biosafety. Finally, one participant pointed out that the existing CBMs might place too much emphasis on BSL4 containment facilities. While there has been a proliferation in the number of BSL4 facilities, lower containment levels, i.e. BSL3 and BSL2, are becoming increasingly important because these facilitates are cheaper to operate and are sometimes used to work with dangerous pathogens.

- ***How have the political, security, scientific and technological contexts changed in the twenty years since the CBM mechanism was introduced?***

Plenary discussion

The plenary discussion touched on a number of observations made above, while adding further detail to the discussion. Three developments were routinely mentioned as having fundamentally changed the context within which CBMs operate, namely: (1) rapid advances in biotechnology, (2) the information technology (IT) revolution and (3) the growing threat of bioterrorism. Together, these changes were acknowledged as having potentially 'changed the rules of the game' by extending the tools and knowledge of biology to a growing number of actors, including those with both the intent and capability to cause deliberate harm. Many, if not all, workshop participants agreed that these developments should be accounted for in the CBM mechanism.

Concerning biotechnology, it was stressed that much has changed since the CBM mechanism was introduced. Over the last twenty years, the capability to manipulate molecular life has greatly increased and the necessary knowledge and capacity have been globally distributed. Synthetic biology was picked up on by several workshop participants as being indicative of this transformation. A science that promises to make genetic engineering easier and more widely accessible, synthetic biology is suggestive of a 'new biology' that is no longer confined to major research institutes, vaccine production facilities and biodefence research facilities, but also extended to bio-assembly facilities, small-scale laboratories and informal research settings.

IT was similarly picked up on as having grown exponentially over the last twenty years, having significant implications for the diffusion of knowledge, both constructive and destructive. Participants described the increase in open source literature on the Internet and the use of online forums as providing new access points for the transmission of information that might be of concern to the BWC. At the same time, the Internet was said to offer new opportunities for the rapid exchange of CBM-relevant information, CBM data storage, and alike. Therefore, an underlying observation was: IT has introduced new synergies that can be viewed as both a cause of concern and an opportunity.

Finally, the threat of bioterrorism, partly enabled by advances in biotechnology and IT, was raised as pushing the scope of what is presently covered under CBMs, and possibly under the BWC more generally. Workshop participants expressed a degree of unease regarding the applicability of CBMs in a security context that seems less aligned with the conventional state-state conflicts that motivated the introduction of CBMs during the Cold War. Today, participants observed, there has been a broadening of the threat spectrum to include non-state actors, employing more unconventional means of attack, which might require that CBMs be updated to capture the measures taken by states to counter this threat. For example, States Parties might want to share information on steps taken to prevent bioterrorism and/or to mitigate the impact of an attack.

Session II: Improving the quantity and quality of CBM submissions

- ***What state party proposals and civil society recommendations have been made to date on revisions to the current CBM forms, and what is the value of these proposals?***

Presentation by Alex Hamilton

Alex Hamilton's presentation outlined a comprehensive list of proposals, forwarded by States Parties, experts, civil society and others, documented in the pre-circulated workshop report, "Compendium of Proposals to Improve the CBM Mechanism" (see Appendix B).

To begin, he emphasized that thanks to these recommendations, dating back to the early 1990s, a wealth of material exists to help inform the debate on improving the CBM mechanism. He suggested that these recommendations can be grouped into two broad categories: (1) proposals that seek to encourage more States Parties to participate in the CBM information exchange, thereby increasing the quantity of CBM declarations, and (2) proposals that seek to improve the relevance of the CBM forms, thereby improving the quality of the information exchanged through the CBM mechanism.

He then defined the following sub-categories of proposals that seek to: improve the questions asked on CBM forms, making them clearer and more relevant; improve the usability of CBM forms, making their completion more intuitive and user-friendly; modernize the reporting process, moving towards a comprehensive information management system; improve the national data collection process; strengthen the role of the ISU, developing an administrative office that has the resources and authority to further facilitate the implementation of the CBM mechanism; promote cooperation between States Parties, encouraging bilateral and multilateral dialogue that supports those parties struggling to meet their CBM obligations, and, finally, invite civil society groups to play a larger role in the CBM process, drawing on their energy and expertise to help improve the CBM mechanism and further the aims of the BWC.

- ***How can the existing CBM forms, submission process, and data access management be improved?***

Plenary discussion

Workshop participants identified the lack of participation in the CBM process as the aspect of CBMs in greatest need of improvement. While nine countries were said to have consistently submitted annual CBMs, and these countries are among the "major players," it was pointed out that, overall, there has been approximately 35% participation over twenty years. Over the last ten years, twenty-one countries were said to have made annual declarations, while eighty-one countries made at least one declaration over the same time. It was stressed that states desire "proportionality" and that if one submits its CBMs, it expects others to submit. A number of reasons were cited for why there is such a poor rate of return among States Parties, including: a lack of capacity; a lack of resources; a lack of governance; a government bureaucracy that does not facilitate data collection/collation; language problems; disinterest and/or a feeling that there is legitimately "nothing to declare" whatsoever.

In view of these obstacles, many participants expressed an urgent need for increased assistance on the part of States Parties, civil society, and others, to aid those States Parties that request help in completing their CBM forms. Some participants went so far as to say that States Parties, and others, should "track down" those that have not submitted and offer their assistance, with or without an invitation to do so. Others, while not disagreeing that there are legitimate reasons for assistance, expressed that all States Parties have the necessary capacity to make declarations, even if it is to merely acknowledge that there is "nothing to declare" and there never has been anything to declare. It was suggested that those States Parties with more to declare should declare more and those with less to declare should declare less, but everyone should declare something. One participant also suggested a "lottery," where all countries that have never submitted CBMs are put in a lottery and the country that is chosen is offered one-to-one assistance.

Other proposals to increase the number of CBM submissions, included: ISU reminders alerting States Parties to the 15 April deadline; submission guidelines; returning a copy of the previous year's submission (although it was mentioned that this might pose a liability issue for the ISU); regional workshops on national implementation and data collection/collation; outreach activities aimed at reminding States Parties of their "obligation" to submit complete, accurate and annual CBMs; "streamlining" the CBM forms, improving their formatting, adding tick boxes and multiple choice questions, and introducing electronic CBMs as soon as possible, which could include drop boxes, etc., all with the aim of making the CBM submission process more intuitive, easier and faster to complete.

Workshop participants also stressed a concurrent need to update CBMs to meet today's context and to remove ambiguities in the wording of the questions asked. It was suggested that this would not only help make the information more relevant, enhancing the quality of the information

exchanged, but would also have positive spin-offs for encouraging greater participation in the CBM process because of the perceived value-added by more focused questions. It was also suggested that CBMs should be made as open as possible to the public, helping to establish a spirit of "full compliance," which might motivate further participation in the CBM process.

Finally, it was discussed that CBMs could be linked to a verification system, but that CBMs should not be confused with a verification system. A verification system would require States Parties to sign on to a new protocol in the future, which all States Parties would not necessarily be willing to do.

Session III: Reconsidering the current CBMs

- ***If the measures were to be redesigned from scratch, what content would be covered?***

Feedback from Richard Lennane's working group

Speaking on behalf of his working group, Richard Lennane proposed a structured way of rethinking CBMs, posing the following questions: (1) "What information would increase confidence?" (2) "How do we go about collecting this information?" and (3) "What should be done with this information once it is collected?"

In response to the first question, Lennane suggested focusing on the following areas: biodefence research programmes, BSL4 facilities and BSL facilities working with agents or equipment "of concern," such as aerosol technology. He also suggested focusing on national implementation efforts, as well as transfers, both domestically and internationally, of listed agents and relevant technology, such as DNA synthesizers.

In response to the second question he posed about how to collect the information, Lennane proposed a multi-tiered reporting mechanism based on annual CBM declarations, ISU data collected from open sources and ad hoc contributions from States Parties. Combined, these elements were described as having the potential to produce a useful synergy, adding depth to the reporting process.

Third, he suggested that CBM submissions could be shared at annual conferences that bring together those States Parties that participate in the CBM process. Furthermore, this data could be statistically analyzed through the use of automated, electronic CBM submissions that make use of tick boxes. Finally, it was suggested that as much information as a possible should be made public, while protecting sensitive information and respecting the wishes of States Parties to choose for themselves.

Feedback from Volker Beck's working group

Volker Beck, speaking on behalf of his working group, proposed a number of

modifications to the existing CBM forms. First, he suggested that Form 0 should be clarified, specifying what is meant by "Nothing to declare/Nothing new to declare." Second, he proposed that Form A, part 1 should emphasize the need to declare BSL4 facilities, while not discouraging States Parties from reporting other facilities that meet very high containment standards. Also on Form A, part 1, he suggested that publication lists should be requested. Third, he suggested that Form A, part 2 should not only ask for information on "military biodefence," but also "civilian biodefence." Fourth, he suggested that Form B might be redundant, but before deleting this form it is necessary to engage the World Health Organization (WHO) to see how they understand and report "rare laboratory accidents." Fifth, Form C was thought to be out of date, as information on publications can now be accessed through open sources. Sixth, Form D was identified as particularly important due to linkages with Article X, on cooperation, and thus should be kept. Finally, he questioned the relevance of Form G in today's context, as states are less concerned with vaccine production capabilities.

Feedback from Lorna Miller's working group

Speaking on behalf of her working group, Lorna Miller emphasized that it can be useful to think of CBMs "from scratch," posing the questions: "What is the point of CBMs?" and "What sort of information is of interest?" She then explained that her group viewed CBMs as a "transparency mechanism" and underlined the importance of "information exchange." She then identified Form E, on legislation, and Form A, part 1, on research facilities, as being particularly conducive to achieving these aims. Regarding Form E, she suggested that questions on governance and legislation are essential, as well as questions on oversight and awareness raising. Regarding Form A, part 1, she pointed out that the focus should not only be on BSL4 facilities, but also other production facilities. Her group had also expressed an interest in information on industry and the possibility of annual presentations being made on facilities.

Miller then shifted her attention to the question of sharing information, questioning the various trade-offs between "private/public" declarations. She explained that her group found it useful to pose the question: "Who needs the information and why?" She then addressed the question of participation, considering possible roles for incentives and disincentives. Specifically, she forwarded the possibility of only permitting those States Parties participating in the CBM process to attend meetings on data collected through the CBM mechanism. Finally, she raised the possibility of introducing some form of "outsourcing mechanism," which might be used to provide an external source of review and oversight.

Session IV: Other elements of compliance assessment

- ***What other compliance assessment mechanisms are at our disposal and how does the CBM mechanism fit with these?***

Presentation by Angela Woodward

Angela Woodward's presentation outlined three BWC compliance mechanisms: (1) Article V, (2) Article VI and (3) UN investigations.

First, she discussed Article V – consultation and cooperation procedure – emphasizing that this mechanism is intended for States Parties to "undertake to consult one another and to cooperate" through the BWC, as well as through "appropriate international procedures within the framework of the United Nations." She cited the dialogue on the 1979 Sverdlovsk incident as an example of bilateral consultation and cooperation within the BWC context and the 1997 *Thrips palmi* case, a Formal Consultative Meeting, as an example of multilateral consultation and cooperation. She cautioned though that this mechanism does not offer a specific protocol.

Second, she discussed Article VI – complaint procedure – emphasizing that this mechanism permits States Parties to lodge a complaint with the UN Security Council in the event that any other State Party is "acting in breach of its obligations." Such a complaint, she added, should include "all possible evidence confirming its validity." She also noted that States Parties are expected to participate in any investigation initiated by the Security Council, and that the Security Council is to inform States Parties of the results of the investigation. This mechanism was said to leave the option open for enforcement, but it is highly politicized and has never been used.

Third, she discussed the possibility of UN investigations, including "UN Secretary-General fact-finding missions" and "UN Security Council mandated inspections." She expressed that fact-finding missions are challenged by States Parties not being obliged to participate in such missions, as well as by the time delay in getting a fact-finding team on the ground. She added that the Security Council's mandate to investigate was used in the Iraq case.

Woodward concluded by drawing a distinction between the compliance mechanisms outlined above and the CBM mechanism, pointing out that compliance mechanisms are permanent, whereas CBMs were intended to be a temporary measure. She suggested that the existing compliance mechanisms should be improved "along side" CBMs.

Plenary discussion

Woodward's closing point – that CBMs occupy an unstable space relative to the other compliance mechanisms – was reemphasized. It was also suggested that ensuring compliance is difficult, if not impossible, in the absence of on-site verification. Moreover, a number of workshop participants

emphasized that CBMs are not, and never were, intended to address the issue of compliance. These participants expressed that CBMs are "transparency measures" only. Others argued that, while CBMs may not "ensure" compliance, they do "contribute to" compliance. One participant explained that their country closely reviews CBM submissions to help gauge the activities of States Parties and consults these parties, under Article V, to resolve any questions or concerns.

- ***How can civil society play a constructive role in increasing transparency and building confidence between states parties?***

Presentation by Iris Hunger

Iris Hunger's presentation highlighted a number of constructive roles civil society can play in contributing to the CBM process. To begin, she broadly defined civil society as "non-state actors." She identified "knowledge, experience and expertise" and the ability to exert "public pressure" among the core competencies of civil society, which she suggested could be used to: offer advice to governments, pressure governments, support governments in implementing their decisions, or fill in the gaps where governments are unwilling or unable to act. Civil society was also described as operating at multiple levels, internationally to locally, and having the ability to be cooperative, supportive or confrontational.

Hunger explained that civil society can contribute to enhancing transparency in several ways, including through monitoring States Parties' biodefence activities, collecting data from open sources, analyzing and processing data to generate accessible information, and, ultimately, by bringing this information into the public sphere. By enhancing transparency in this way, she suggested, civil society can contribute to building confidence between governments and publics. Although a positive outcome, she emphasized that trying to open up CBMs to public scrutiny in this fashion can be constrained by limited access to States Parties' information.

Hunger closed her presentation with several examples of how civil society has contributed to enhancing transparency and building confidence in the CBM context. These examples included: investigating the Sverdlovsk anthrax outbreak (HSP), investigating past biological weapons programmes (ISSA), and analyzing and supporting national implementation (VERTIC).

Plenary discussion

The plenary discussion reinforced that there is an important role for civil society to play in improving the CBM mechanism. It was discussed that civil society can assist States Parties throughout all stages of the reporting process, from implementation through to data collection and analysis. It was suggested that civil society could play a particularly valuable role in assisting States Parties complete their first CBMs, as the first CBM submission is often the most difficult due to a lack of experience.

Session V: Moving forward

- ***What role could/should the CBM discussion play at the 2011 Review Conference?***
- ***How can we collectively facilitate a constructive CBM discussion and revision process?***
- ***What needs to be prepared for the 2011 CBM discussion?***
- ***What are possible outcomes of the 2011 Review Conference with regard to CBMs?***

Plenary discussion

Workshop participants emphasized that it is important to make CBMs a priority at the 2011 Review Conference to ensure that they receive the "comprehensive review" agreed in 2006. To achieve this, it was proposed that participants review the statements made at the Sixth Review Conference and build on States Parties' expectations.

A number of suggestions were then made for how to prepare a proposal that would be received favourably in 2011. Most, if not all, participants shared the view that it is best to build on points of agreement and to move outward, taking on, as closely as possible, the perspectives of States Parties. Some participants proposed preparing a draft proposal that could be shared with States Parties in advance the Seventh Review Conference.

A number of participants emphasized the importance of developing a proposal that prioritized the need to increase participation in the CBM process. Some shared the view that the best way to accomplish this would be to improve the contents of the CBM forms, while others suggested an approach that would also take into consideration improvements to the reporting process, national data collection, administrative improvements, etc.

Some participants suggested preparing a complete proposal to be agreed at the Seventh Review Conference and others suggested preparing a comprehensive, but not complete, proposal that could be reviewed at the Conference, but finalized at an Ad Hoc meeting following the Conference.

An "incremental approach" was generally favoured as the best way forward. One participant highlighted two extreme options: (1) "abolish CBMs" or (2) "make them legally binding." The participant then forwarded a third option: (3) "somewhere between option 1 and 2."

Summary, next steps and close

The conclusion to the first workshop drew out a number of key themes discussed by workshop participants, including the apparent need to make procedural changes to the CBM mechanism, as well as improvements to the content of the existing CBM forms, in an effort to facilitate the increased

quantity and the improved quality of the information exchanged. At the same time, it was stressed that CBMs should be “modified,” not “revolutionized.”

Proposed procedural changes to the CBM mechanism, included: modernizing the reporting process, providing guidelines on how to prepare CBM submissions, and offering further assistance to those States Parties struggling to fulfill their CBM obligations.

Proposed modifications to the content of the CBM forms, included: clarifying the titles and questions on the CBM forms, ensuring that the information requested is still relevant in today’s context, and streamlining the format of the CBM forms through the expanded use of multiple-choice questions, tick boxes, etc.

In closing, it was stressed that it is essential to ask: “What do we want out of CBMs?” and to make the necessary improvements to ensure that these expectations are reached. The role of CBMs as “transparency measures” with the potential to “build confidence” through the “exchange of information” was identified as paramount in this regard and, thus, ensuring greater participation in the CBM process, as well requesting the information of greatest relevance to the Convention, was said to be called for.

Workshop 2: Substantive Agenda

The second workshop took place immediately following the Meeting of States Parties on the 12th of December 2009 at the Crowne Plaza Hotel in Geneva, Switzerland. The workshop was sponsored by Norway.

Session I: What is the purpose of a CBM mechanism?
Chair: Reto Wollenmann

Plenary discussion:
- What should be the purpose of a CBM mechanism?
- What (if any) revisions to the current system would best serve such a purpose?

The plenary discussion was preceded by brief presentation by Marius Grinius and Mohammad Taghi Hosseini.

Session II: Operational challenges
Chair: Filippa Lentzos

Plenary discussion:
- What are operational strengths and challenges in national data collection and submission?
- How can participation in the CBM mechanism be enhanced?
- What assistance/support could be provided by civil society and international institutions?

The plenary discussion was preceded by brief presentations from Amer Ikram, Nina Steenhard and Iris Hunger.

Session III: What CBM system for the future?
Chair: Richard Lennane

Working Group discussions:
- If the CBM mechanism had to be re-designed from scratch, what would it be like?

The Working Group discussions were preceded by brief presentations from Ben Steyn, Robert Matthews and Marie Chevrier, who also chaired the Working Groups.

Plenary discussion

Summary, next steps and close
Chair: Theresa Hitchens

Workshop 2: Session Summaries

Session I: What is the purpose of a CBM mechanism?

- ***What should be the purpose of a CBM mechanism?***
- ***What (if any) revisions to the current system would best serve such a purpose?***

Presentation by Marius Grinius

Marius Grinius, Chairman of the 2009 BWC meetings, opened the second workshop challenging participants to think critically about the purpose of the BWC and the role of CBMs in the BWC context. He suggested that "times have changed" and that "old categories may no longer apply," posing the questions: Should the category 'WMD' apply to 'biological weapons'? Is the name 'biological weapons' appropriate? Are they 'strategic weapons'? What is the role of 'biology' in modern warfare?

He emphasized that CBMs could be "streamlined" and "modernized" or that they could be discarded, reassessed and developed from scratch. He asked: "How do we establish compliance?" And questioned how this might be achieved, and how CBMs might fit within such a framework. Finally, he suggested that participants use the occasion of the CBM workshop series to take stock of these issues and to think creatively about how CBMs could be developed to maximize their utility.

Presentation by Mohammad Taghi Hosseini

Mohammad Taghi Hosseini's presentation drew attention to the observation that low participation in the CBM information exchange does not establish confidence and, thus, universality is needed in the absence of legally binding measures.

He then emphasized that CBMs are an "evolving process" and that it is necessary to evaluate all aspects of the CBM mechanism and to make the necessary adjustments to enhance its utility.

Plenary discussion

The plenary discussion brought out a number of views on the purpose of CBMs and how CBMs might be improved to better serve this purpose. It was acknowledged that CBMs serve as a "means of communication," facilitating the "exchange of information" relevant to the Convention. This exchange, in turn, was described as an "opportunity" for States Parties to openly share information on the peaceful application of biology. One participant pointed to two distinct functions of CBMs: (1) CBMs demonstrate a commitment on behalf of States Parties to the BWC, and (2) CBMs help to establish transparency and, through transparency, confidence, as long as the information exchanged is sufficient to establish transparency. Several

participants expressed that CBMs serve different purposes for different states, requiring insight into the role CBMs play for different states. Others underlined the importance of CBMs as a means of enhancing compliance with the Convention. One participant noted that CBMs can also provide a glimpse of how states use relevant technology. The value of CBMs was challenged in light of being an interim solution introduced during a time of Cold War conflict between East and West. However, it was also suggested that there remain concerns of secrecy and non-compliance that underline CBMs continued relevance within the BWC context.

A number of views on how to go about improving the CBM mechanism were also shared. Some participants suggested that it is necessary to rethink the whole CBM mechanism and to consider alternative means of capturing the information that is most likely to build confidence. Others suggested a more incremental approach that favoured modifications to the existing CBM mechanism. These individuals argued for "evolution" over "revolution" and suggested that it would be a mistake to discard CBMs, as a suitable replacement may not be found.

The proposed areas for improvement to the current CBM mechanism, included: adjusting CBMs to be more in line with the shift in perception from state to non-state biological weapons threats; focusing more on "risky bioscience," biosafety and biosecurity; introducing a "cycle of engagement," which offers feedback in response to States Parties' declarations; making CBMs of greater interest to States Parties, especially developing countries with small biotechnology sectors and/or non-existent biodefence programmes, which might not otherwise see the value of CBMs; focusing CBMs on the exchange of information that is most likely to build confidence, including information on biodefence research and development activities, BSL4 laboratories and national implementation; ensuring that no States Parties are deterred from making CBM submissions; introducing incentives to motivate increased participation in the CBM process, including the provision of annual follow-up sessions that offer analysis and feedback on CBM submissions to participating States Parties, and, finally, making it clear to all States Parties that CBMs should not be viewed as "voluntary," but as an "obligation" under the Convention.

Session II: Operational challenges

- ***What are operational strengths and challenges in national data collection and submission?***
- ***How can participation in the CBM mechanism be enhanced?***
- ***What assistance/support could be provided by civil society and international institutions?***

Presentation by Amer Ikram

Amer Ikram's presentation outlined a number of strengths and weaknesses in the CBM regime, drawing on some operational challenges encountered in

Pakistan, as well as presenting some possible solutions to these challenges.

To begin, he explained that, ideally, CBM declarations should be precise, thorough, timely and consistent. In practice, however, he suggested that States Parties encounter a number of obstacles that stand in the way of achieving this ideal, including: a lack of experience preparing CBMs; a lack of familiarity with CBMs; an unknown fear of submitting; and a lack of interest in submitting.

He then outlined several, ideal, strengths of CBMs, including: CBMs could provide an alternative to verification; they are multilateral and, therefore, cooperative; they stand to increase transparency; and they build confidence between States Parties. He also outlined several practical weaknesses, including: CBMs are not universal; CBM submissions are inconsistent; reluctance or ignorance on behalf of States Parties; and financial constraints.

A number of impediments to the CBM submission process encountered in Pakistan were provided as a case study, including: a lack of awareness; poor access to information from government institutions and agencies; the absence of a "biosecurity hub;" and limited resources. Possible solutions to these impediments, included, he suggested, regional and/or UN-appointed assistance, targeted help with collation, and assistance from civil society.

In conclusion, Ikram called for workshop participants to consider the value of CBMs versus the implementation of Article X, as well as the possibility of CBMs becoming legally binding.

Presentation by Nina Steenhard

Nina Steenhard, drawing on her experience at the Centre for Biosecurity and Biopreparedness, discussed the CBM submission process in Denmark and the role a 'biosecurity hub' can play in facilitating this process. In the absence of a biosecurity hub, she suggested, CBM data collection must be delegated to multiple ministries and then reported back to an administrative office that does not necessarily understand the complexity of CBMs. In the presence of biosecurity hub, however, the effectiveness of the CBM submission process can be enhanced, as such a centre not only provides a centralized location to receive and process CBM data, but also possesses the necessary experience to interpret the complexities of the CBM requirements. Such a centre, she suggested, can also help raise awareness in the home country and ensure compliance with the CBM regime and the greater BWC. The key obstacle standing in the way of this potential, however, is limited authority to access the necessary information to complete the CBM forms.

Presentation by Iris Hunger

Iris Hunger's presentation addressed how civil society can contribute to enhancing the CBM process. She began by highlighting that civil society can help from beginning to end, including: (1) collecting and preparing data, (2) collating CBM submissions, and (3) using CBM submissions. She

emphasized that her presentation would primarily address '(1)' and '(3)'.

First, she drew workshop participants' attention to how civil society can assist in the data collection process, pointing out several actions, including: raising awareness that "there is a CBM requirement," which can be facilitated by civil society sending reminders to governments; collecting relevant data, which largely depends on the national level of implementation; and filling out CBM forms, which can be further aided by the use of CBM guides, such as the guide recently developed by the EU.

Second, she outlined several ways in which civil society can assist States Parties in using their CBMs, including the following actions: offering technical information or clarification; assisting with translation, although this is limited due to resource constraints and might be better facilitated by the ISU or States Parties that are willing to share their translations with others; analyzing participation data, which would likely to be different than the analysis performed by the ISU; and verifying data by way of comparing submitted data with open source data available on the Internet or by way of on-site or off-site verification of laboratories, although this is largely a state enterprise.

In her concluding remarks, Hunger expressed that "we have come a long way," acknowledging the introduction of the ISU, the move towards electronic submissions and the steps taken to compile participation data. She then emphasized that there is an important "niche" for civil society to play in enhancing the CBM process, but that resources and political mandate limit civil society's contribution.

Plenary discussion

Workshop participants opened the plenary discussion acknowledging that there are clear differences between countries in terms of their experience with, and capacity for, collecting and processing CBM data. One participant emphasized that it is "helpful to keep an open mind" in light of this observation, as all countries are not equally prepared to fulfill the CBM reporting requirement, requiring different sensitivities in each case. One participant cited "regional problems," indicating that in their region most countries did not submit CBMs or that they submitted incomplete CBMs. It was, however, emphasized that CBMs get "easier over time" and that the first CBM submission is the most difficult. Starting out, participants suggested that there are many questions facing national authorities, including where to find information, what information is important, who should be contacted regarding this information, and who should be delegated responsibility for collecting and cross-checking this information.

In addition to the underlying challenges facing inexperienced countries, a number of structural challenges were also identified, including: language difficulties; the absence of a designated "national authority" or "contact point"; a lack of continuity or "institutional memory" between collators; a lack of incentives to submit; reluctance on behalf of government and industry to share information; the complexity of working with multiple government

agencies; the absence of a legal basis or mandate for CBM submission; and difficulties in interpreting the CBM forms.

In response to these structural challenges, a number of proposals were made to help encourage further submission, including: using translation software; establishing a national contact point or national authority; ensuring continuity in collator rotation through the use of handover notes; introducing incentives that make CBMs "more interesting" to States Parties that might otherwise see little value in making a CBM declaration; raising awareness about the importance of CBMs among multiple national stakeholders, which could be facilitated by civil society and/or by States Parties on a bilateral or multilateral basis; appealing to civil society, as well as States Parties, to provide "technical assistance" and "political guidance;" delegating national data collection to sub-committees and experts in the field, including individuals from industry and academia; introducing a legal mandate that requires complete and accurate CBMs to be submitted on a regular and timely basis; clarifying ambiguities in the CBM forms, including the "nothing to declare"/"nothing new to declare" requirement; and automating the data collection process, which at least one State Party has begun to pursue.

In conclusion, it was emphasized that CBMs can be difficult and time consuming, requiring approximately four months to complete for States Parties with the most to declare. For those States Parties lacking a robust infrastructure and clear legal mandate, the CBM process can be even more difficult. Thus, it was acknowledged that there is a clear need for States Parties to discuss these difficulties, as well as best practices, in an open forum, and to request the support of civil society and other international institutions where and when support is needed.

Session III: What CBM system for the future?

- ***If the CBM mechanism had to be re-designed from scratch, what would it be like?***

Presentation by Ben Steyn

Ben Steyn suggested "cleaning the slate" and thinking critically and creatively about how CBMs should look. At the same time, he cautioned that it is important to be "realistic" in an effort to maintain the political will necessary to move the CBM debate forward. One idea he put forward to stimulate the CBM debate was to change the name of "Confidence-Building Measures" to "Transparency Measures" to more appropriately convey, what he described as, the intention of the mechanism. He also suggested that CBMs should not focus on lab containment levels, but on the "levels labs are working at," thus capturing the "kinds of projects" carried out at facilities.

Turning his attention to the content of the CBM forms, he suggested the following modifications: delete CBM B, on disease outbreaks, as this information is already covered by the WHO; delete CBM C, on publications,

as this information is available elsewhere; retain CBM E, on relevant legislation; reconsider the framing of Form G, on vaccine production facilities; add a CBM that allows States Parties to explicitly request assistance; and include States Parties views' on relevant scientific advances.

Concluding his presentation, he suggested a need for a "two-way information exchange," which would provide States Parties with an opportunity to discuss and use the information contained in CBMs.

Presentation by Robert Matthew

Robert Matthew's presentation focused on how to update CBMs to capture the information of greatest relevance to the Convention in today's context. To achieve this, he suggested focusing on: (1) "experiments of concern," referencing the "Fink Report" by the US National Academies of Science, (2) recent advances in science and technology, and (3) the current security environment. More specifically, he suggested focusing on the following priorities, including information on: experiments of concern conducted in biodefence research facilities, national oversight processes for these facilities, and codes of conduct relevant to these facilities; experiments of concern conducted in high containment laboratories, national oversight processes for these laboratories, and codes of conduct relevant to these laboratories; any other facilities conducting experiments of concern; legislation that covers training undertaken at listed facilities; national regulation; synthetic biology research and similar advanced bioengineering work; and outreach, education and codes of conduct.

In conclusion, Matthew's emphasized that he did not try to fit these proposals into the CBM template (CBM A, CBM B, etc.), rather he chose to highlight the "priority areas" that would, he suggested, largely address today's biological weapons concerns, including bioterrorism.

Presentation by Marie Chevrier

Marie Chevrier's presentation highlighted ways of improving CBMs to be more in line with today's context. Historically, she suggested, CBMs were intended to address issues concerning dual-use infrastructure and capabilities in the Cold War context. Today, she suggested, it is less important to clarify "what states possess" and more important to clarify "how biology is being used" for peaceful purposes.

To help focus CBMs on this change in context, she proposed the following modifications to the CBM forms: add laws and regulations that govern facilities listed on CBM A, part 1; add laws and regulations that demonstrate compliance with the BWC to CBM A, part 2, including procedures for "vetting" biodefence projects to demonstrate compliance with Article I; revise CBM B, focusing on disease outbreaks of particular relevance to the BWC; revise Form C to account for the availability of publications on the Internet and include information on the publication review process, codes of conduct and awareness raising; and add forms that capture relevant advances in science

and technology and other significant contextual changes.

Feedback from Ben Steyn's working group

Speaking on behalf of his group, Ben Steyn emphasized that legislation relevant to each form should be included. He also noted that States Parties should provide an indication of governance and how legislation is analyzed. He then suggested that some form of "CBM review" should be introduced, which provides an occasion for States Parties to discuss, and provide feedback on, CBMs. He indicated that CBM analysis and comparisons against open sources might also be useful. He also pointed out that an indication of States Parties' vulnerabilities might be assessed and shared. Certain types of research, including work on synthetic biology, should also be addressed in some capacity. Finally, he mentioned the possibility of "national compliance reports" and raised the question of whether "diseases that deviate from the norm," as well as plant and animal diseases, should be addressed.

Feedback from Robert Matthew's working group

Speaking on behalf of his group, Robert Matthew suggested that the name "Confidence Building Measures" should be replaced by a name that more closely conveys its purpose, such as "Information Exchange."

He then emphasized the importance of information on national legislation, regulation and oversight. He suggested that national legislation should become a prominent part of the CBM forms, pointing to specific questions such as: "Is this an offense under your legislation?" He emphasized that national oversight processes demonstrating compliance with the BWC should be indicated. He also proposed that broader regulatory aspects, such as awareness raising, education and codes of conduct, should be requested.

Turning his attention to the topic of biodefence, he suggested that this measure might be divided into "biodefence" and "bio-preparedness." Similarly, he suggested that biodefence contracts should be broken down into "biodefence contracts" and "bio-preparedness contracts."

In reference to high containment laboratories and facilities, he suggested that these should not be limited to BSL4s, but should also include BSL3s and possibly BSL2s, as these might be used to conduct work with dangerous pathogens that might be of interest to States Parties.

Finally, he suggested that Form B should be deleted altogether, as it is redundant in light of the WHO, the OIE, etc. In reference to From G, he suggested that information should continue to be requested on vaccine production facilities, but information on other relevant biological research facilities should also be requested.

Feedback from Marie Chevrier's working group

Marie Chevrier, reporting her group's findings, emphasized a need to balance

the ease of CBM completion with the utility of each measure, ensuring that participation is increased, while not sacrificing important information. She pointed to the legislation requirement as being particularly important, suggesting that a CBM on legislation should be retained, as well as requesting relevant legislation on other forms. She also emphasized that "experiments of concern" should be addressed, embracing concerns about new technologies, like synthetic biology. She underlined that "codes of conduct" are worthwhile, but that they depend on the "context of the research," so this information should also be requested. Turning her attention to CBM B, she suggested that "disease outbreaks and pathogens of concern" should be clarified. She also proposed that States Parties could calculate some form of "vulnerability calculus." She then emphasized that BSL4 facilities, in the biodefence context, should be declared. Finally, she encouraged some form of follow-up to CBM submissions, providing States Parties with an opportunity to make use of CBM data and provide feedback where necessary.

Summary, next steps and close

The second workshop closed with a brief overview of the key themes raised by workshop participants, including the following: CBMs are predominately concerned with "information exchange," "transparency" and "communication;" the success of the CBM regime depends on increased participation in the CBM process; all States Parties are not equally well placed to make CBM submissions, which requires "technical" as well as "political" assistance; and CBMs should be modified to account for changes in context and to better capture the information of greatest relevance to the Convention.

In closing, it was suggested that, if the outcome of the CBM debate is to be successful, States Parties will require a clear understanding of what they should report, outlined in a structured proposal, emphasizing how the suggested changes stand to enhance confidence. It was further emphasized that the findings of the 1540 Committee provide a strong indication of what does and does not work. Finally, it was acknowledged that a clear strategy is essential for successfully delivering a proposal to States Parties in the lead-up to 2011.

Workshop 3: Substantive Agenda

The third and last workshop in the series took place on the 26th and 27th of April 2010 at the Federal Foreign Office in Berlin, Germany. The workshop was sponsored by Germany.

Session I: Revising the forms

Plenary discussion on reporting relevant biotechnological capacity and on revisions to CBM Form A, part 1
Chair: Volker Beck

Plenary discussion on reporting biodefence facilities and activities and on revisions to CBM Form A, part 2 and Form F
Chair: Filippa Lentzos

Plenary discussion on reporting relevant production capacity and on revisions to CBM Form G
Chair: Iris Hunger

Plenary discussion on reporting on relevant disease outbreaks and on revisions to CBM Form B
Chair: Lorna Miller

Plenary discussion on reporting on national implementation measures and on revisions to CBM Form E
Chair: Marie Chevrier

Plenary discussion on reporting on cooperation and assistance and on revisions to CBM Forms C and D
Chair: Tonie Jaquez

Session II: Updating the submission and distribution process

Plenary discussion on modalities for submission, publication and analysis
Chair: Piers Millett

Plenary discussion on assembling the CBM package
Chair: Piers Millett

Summary, next steps and close
Chair: Volker Beck

Workshop 3: Session Summaries

Session I: Revising the forms

- ***Plenary discussion on reporting relevant biotechnological capacity and on revisions to CBM Form A, part 1***

Plenary discussion

CBM Form A, part 1, was acknowledged by workshop participants to be an important form aimed at capturing information on "capacity" and "how this capacity is used," building up a picture of States Parties' research activities.

Most participants argued that the focus of this form should be on BSL4 laboratories, irrespective of their status as 'state' or 'non-state,' 'private' or 'public.' At the same time, participants expressed an interest in not discouraging States Parties from sharing information on other laboratories that work with dangerous pathogens at lower containment levels. It was suggested that all States Parties should be able to, and should have the opportunity to, communicate information on the types of pathogens they work with and where these pathogens are held. One participant also proposed requesting information on level 4 culture collections, but this was countered by others arguing that States Parties that maintain level 4 culture collections should necessarily have BSL4 capacity, which should already be declared.

A number of participants suggested that this form could request information on specific select agents and/or specialized equipment, including, among other things, DNA synthesizers. The counter argument, however, was that this would require listing agents or equipment "of concern," which would be problematic, as these lists would have to be agreed upon by States Parties and would become outdated over time. One participant posed the question: "How much modification would be required, for instance, to change anthrax into something else?" This participant suggested that "risk groups" could be indicated, as a possible alternative to lists.

A number of participants suggested that this form should request that States Parties provide publication lists linked with listed laboratories. It was argued that such lists would provide a detailed description of the research activities conducted in these laboratories, including insights into the kinds of pathogens and types of equipment being used. It was suggested, however, that publication material is already available online.

The subject of whether to include questions requesting information on maximum containment laboratories working with plant and animal pathogens was also discussed. A number of participants suggested this might be difficult because states use different standards for classifying plant and animal pathogens, as well as different containment standards, depending on whether the pathogen is endemic or non-endemic to a given region. Due, in part, to these complications, it was suggested that questions on plant or animal

pathogens should be limited to a footnote. Of the two, animal pathogens were suggested to be the higher priority.

A number of participants expressed an interest in several of these proposals, indicating that there are multiple dimensions to determining capacity and the key is "synergy" in the reporting process. It was also acknowledged that there is a trade-off between requesting more information and increasing participation, which requires that careful consideration is given to any additional requests for information (a point which was raised throughout the CBM workshop series). In terms of requesting information on BSL4 capacity, however, one participant suggested that this would pose a limited burden, as there are relatively few BSL4s worldwide.

- ***Plenary discussion on reporting biodefence facilities and activities and on revisions to CBM Form A, part 2 and Form F***

Plenary discussion

CBM Form A, part 2, was said to be, arguably, the most important CBM, as it requests information on active biodefence programmes. From the outset of this discussion, it was noted that the number of reported biodefence programmes has increased significantly in recent years.

Several participants suggested that this form could make use of yes/no questions, such as: "Does your country have a biodefence programme? Yes/No" It was argued that this would provide questions that all States Parties could reasonably answer. To ensure adequate detail, however, participants suggested that yes/no questions should be followed up by more detailed responses and/or links to relevant information.

A number of participants emphasized the need to request information on both "military" and "civilian" biodefence programmes. It was argued that this wording is required to capture information on countermeasures against "biowarfare" and "bioterrorism." To avoid disagreement in terminology, it was suggested that "hostile use" could be used in place of "warfare" and "terrorism," thus referring to: "countermeasures against the hostile use of biological agents or toxins." It was also suggested that the word "programme" might be misleading, as states may not consider their biodefence work as constituting a "coordinated programme." Another participant questioned the relevance of "research and development," suggesting that this term might not capture the full range of biodefence activities. It was suggested that footnotes could be added to clarify terms as needed.

Participants also suggested that information on oversight activities could be requested on this form. While there was some disagreement about what constitutes 'oversight' and, thus, what kinds of questions would best capture a state's oversight activities, information on oversight, in some form, was believed to be important. Questions might include: "What kinds of oversight procedures are in place to review biodefence activities in your country?" "Do

you use review boards?" "How often do they meet?" Some participants suggested that information on local oversight, i.e. facility-to-facility, would be useful. Others suggested that this would require too much detail and would be a burden on States Parties, suggesting that information on more general oversight activities could be captured in Form E. One approach that was suggested would be to leave it to States Parties to communicate their oversight activities, as they understand them.

A number of other proposals were also made, including the possibility of requesting information on: the organizational structure of the biodefence programme; personnel screening procedures; codes of conduct; indoor and outdoor aerosol testing; biodefence exercises; and vaccination programmes. Some participants argued that some of this information can be found on the Internet, so it is not necessary to ask for it again on this form. Others argued that there is no harm in repeating information, on this form or others, particularly when States Parties can easily provide a link to the relevant information. A degree of redundancy in the reporting process, they argued, is useful, as it provides an opportunity to crosscheck information. Thus, multiple compilations of public information, whether compiled by government, the ISU, civil society or others, was argued to be useful.

CBM Form F, which requests information on previous programmes, was described as complimenting CBM Form A, part 2. This form was also argued to be important, even for those States Parties that have already declared past programmes, as archival material may become available that can be used to update this form. It was also argued that it is important to know the timing and extent to which programmes have been dismantled. For this reason, a number of participants suggested that this form should be mandatory to update every five years, as well as being mandatory for new States Parties. CBM Form F was deemed to be particularly important for those states that have yet to sign up to the Convention. It was argued that it is important to give such states the opportunity to declare in the future. It was also suggested that this form could be moved to Form 0, as information on past programmes might fit well in the context of "nothing to declare/nothing new to declare."

- ***Plenary discussion on reporting relevant production capacity and on revisions to CBM Form G***

Plenary discussion

This plenary discussion brought out a number of interpretations of the primary purpose of Form G, as well as the scope of what can, and should, be reasonably requested on this form.

On the one hand, some participants suggested that Form G, which requests information on vaccine production facilities, is primarily concerned with dual use production capacity. On the other hand, some participants suggested that this form is primarily concerned with Article X, on cooperation, and dual use production capacity is a secondary issue. Those who interpreted this form as

dedicated to dual use production capacity were cautious about viewing it as an extension of Article X. One participant expressed that if Form G were solely an extension of Article X, and thus concerned only with helping States Parties develop vaccine production capacity, then it would not make sense in the CBM context. CBMs are aimed at enhancing transparency in order to build confidence.

Concerning the scope of Form G, questions were raised as to whether this form should be limited to human vaccine production facilities or extended to include animal and/or plant vaccine production facilities. Some animal vaccine production facilities were described as being sophisticated enough to produce biological weapons, suggesting that such facilities are relevant. Less was said about plant vaccine production facilities.

Questions were also raised as to whether Form G should be limited to licensed vaccines, which would include all human vaccines but exclude some animal vaccines, or extended to include unlicensed vaccines. Some animal vaccines, including those produced "on the farm," were deemed by some participants to be impractical to include. This led some to suggest that perhaps human vaccine production capacity should be the focus of this form, whereas others maintained that any facilities with sufficient dual use production capacity should be included.

Further complications were introduced by the observation that vaccines may be: (1) produced and consumed domestically, (2) produced to be consumed aboard, or (3) produced abroad to be consumed domestically. Thus, the question was asked whether Form G should cover only vaccine production capacity within a territory or also outside that territory.

While addressing these questions, participants acknowledged that the aim is to improve the "performance" of this form and not to overburden States Parties with information that will not enhance transparency.

- ***Plenary discussion on reporting on relevant disease outbreaks and on revisions to CBM Form B***

Plenary discussion

At the beginning of this discussion it was suggested that much of the information requested on CBM Form B can now be found on WHO and OIE websites, as well as on ProMed; much more information than was the case when CBMs were first introduced. Furthermore, many diseases that can be included under CBM B(i) are not relevant in the BWC context. Finally CBM B(ii) has rarely been used in the history of CBMs. However, it was also suggested that certain unusual disease outbreaks might not be satisfactorily documented by alternative sources.

Drawing on these comments, workshop participants acknowledged that CBM Form B has a role to play in CBMs, but it should be tailored to more precisely

capture the information of greatest interest to the BWC. One workshop participant posed the question: “What elements of Form B do not duplicate existing information by the WHO, the OIE, etc., as well as strengthen CBMs?”

Many participants expressed that CBM B(i) is largely redundant and could be deleted. It was argued that the WHO, the OIE and others, adequately cover this information. However it was also argued that CBM B(i) provides an opportunity for States Parties to indicate that they have sufficient capacity to monitor and report infectious disease outbreaks. It was suggested that, if CBM B(i) were to be retained, States Parties could provide links to relevant material on reported outbreaks. It was also suggested that CBM B(i) could be tailored to address biological weapons-relevant disease outbreaks, but this would require producing a list of biological weapons-relevant disease agents, which was suggested to be politically difficult.

By contrast, many participants acknowledged the relevance of CBM B(ii), and suggested that this aspect of Form B should be fine-tuned and reinforced. Several participants drew attention to paragraph three of the modalities, which characterizes unusual disease outbreaks. Some argued that highlighting this point would be valuable in itself, as it draws attention to the fact that disease agents can be misused. Defining what is meant by disease outbreaks that “deviate from the normal pattern,” however, was raised as a concern, again due to the difficulty of producing a list of biological weapons-relevant disease agents or outbreaks. One suggestion was to leave this choice in the hands of States Parties, encouraging them to report on “what they deem to be particularly unusual” disease outbreaks.

Whether CBM B(i) or CBM B(ii) is retained, one participant suggested that States Parties should perhaps be encouraged to report outbreaks only in the event that the same amount of information cannot already be found on WHO or OIE websites or possibly ProMed.

- ***Plenary discussion on reporting on national implementation measures and on revisions to CBM Form E***

Plenary discussion

Form E was acknowledged as playing a critical role in the CBM mechanism, as it provides a picture of a state’s legislative/regulative framework, helping to convey valuable information on compliance. However, the success of this form was said to depend on the precision of the questions asked.

Workshop participants extensively discussed the yes/no question format of Form E. Many indicated that this format is useful, but not sufficient. It was argued that yes/no questions have the potential to guide States Parties to the questions of greatest interest to the BWC, but that these questions must be followed up by more detailed responses, including, among other things, information on the names of national institutions responsible for the legislation, the names of national contact points and links to relevant material.

It was also acknowledged that while yes/no questions are easier to complete, possibly encouraging a higher response rate, more questions are required to capture the desired information. Furthermore, some argued that Form E should aim to convey a State Party's "culture" of compliance, which would require that each State Party has the opportunity to elaborate, in their own words, the steps taken to implement the Convention, which does not necessarily lend it itself to a yes/no question format.

Beyond the question format, participants suggested a variety of questions aimed at capturing the most important information. Form E, in its present state, was acknowledged as having significant gaps. Therefore, in addition to the information already requested on this form, participants suggested the following: export and import regulations; legislation on biosafety and biosecurity (although it was suggested that these terms would likely require definitions to clarify what is meant by 'biosafety' and 'biosecurity', which could be provided in a footnote); legislation on disease surveillance; codes of conduct and oversight aimed at biodefence research; education and awareness raising activities; as well as specific questions on relevant science and technology.

The potential for civil society to play a role in monitoring legislation and helping to prepare and implement legislation was also discussed. VERTIC's work on biological weapons legislation, for example, was highlighted as providing countries with the possibility of feedback, through an in-depth survey on where there are gaps in their legislation and the steps that can be taken to fill these gaps. It was suggested that VERTIC and others possess a wealth of information that could be used to assist States Parties. The challenge, it was suggested, is raising awareness among States Parties that this information is available to them.

The ISU was also acknowledged as providing another access point to compiled data that could be of use to States Parties. Reference was made, in particular, to the ISU compendium, which could provide a degree of useful overlap for States Parties looking to crosscheck information. It was emphasized that the ISU would be happy to develop a larger database and a dynamic system, given the appropriate mandate.

- ***Plenary discussion on reporting on cooperation and assistance and on revisions to CBM Forms C and D***

Plenary discussion

Workshop participants acknowledged the importance of listing publications, suggesting that is a valuable means of communicating information about States Parties' activities. However, participants were divided between those who suggested that CBM Form C should be retained on the one hand, and those who suggested that CBM Form C should be deleted, and the relevant publications shifted to other forms, especially CBM A, but also CBM B and CBM D, on the other.

Those who suggested that CBM C should be retained, emphasized several points, including: while it may be useful to list relevant publications on other forms, it is also useful to retain CBM C, as publications convey a lot of information, and there is no harm in repeating this information; certain publications may not be as easily accessible online as some suggest, therefore, States Parties should make every effort to make their publications accessible; and CBM C not only provides information on "publications," but also on "publication policy" (part 2 of the modalities), which offers useful information on the degree of openness.

Those who suggested that CBM C should be deleted, emphasized several points, including: while deleting CBM C is recommended, these publications can, and should, be shifted to other forms, and information on publication policy could be shifted to CBM E; CBM C was intended for a time when publications were not widely available, whereas these can now be found online; and even if CBM C was retained, this form only provides States Parties with the "names" and "locations" of publications, not the full articles, therefore publications still need to be tracked down, and possibly purchased, online.

It is worth emphasizing that participants acknowledged that some publications are more valuable than others, especially those concerning any and all laboratories and facilities listed under CBM A, part 1 and part 2.

Workshop participants emphasized that CBM Form D is "integral" to the Convention (particularly under Article X), as it allows States Parties to take "concrete actions" to promote cooperation.

Participants suggested several ways of expanding and reinforcing the "aspirational" aspects of CBM D, including: promote exchange visits, joint research projects and similar cooperative endeavours, in addition to planned events; promote this form as a "vehicle for assistance," offering States Parties the opportunity to explicitly offer and request assistance; and prepare and maintain an online calendar, possibly through the ISU, that documents forthcoming opportunities for exchange, providing States Parties with adequate advance notice.

Participants also underlined several weaknesses, including: CBM D currently "underestimates" the amount of ongoing cooperation ("assistance is taking place and is working"); and there is a lack of awareness and coordination between States Parties offering/requesting opportunities for exchange.

One participant suggested that, even if CBM D is revamped to account for its present deficiencies, the burden of making use of such information still falls on the shoulders of States Parties to seek out and make use of cooperative opportunities and offers of assistance.

Session II: Updating the submission and distribution process

- ***Plenary discussion on modalities for submission, publication and analysis***

Plenary discussion

This plenary discussion covered multiple proposals for improving the CBM submission and distribution process, including the prospect of online submissions, flexible submission deadlines, informal translations, enhanced analysis and follow-up, and increased access to CBM content.

At minimum, it was suggested, CBM forms should be made available online, with the option to submit electronically. Some participants were in favour of a more sophisticated system that could draw on "Web 2.0 user-driven content," which would offer States Parties a secure portal where they could fill in forms, save their work, and send the CBM package to the ISU upon completion. It was suggested that such a system could be tailored to the security specifications of States Parties, allowing certain national authorities to read and fill in material, whereas others could only read this material, etc. It was also suggested that this system might take advantage of "pop-up windows" displaying the previous year's answer to each question, which could then be updated as needed. Alternatively, one participant proposed "community submissions," resembling a "wiki," which would allow anybody to make entries and suggestions, which could be either restricted to one State Party or extended to other States Parties. (This proposal, it should be noted, was suggested to be "too informal" by at least one participant.) Another interesting proposal concerned the prospect of introducing a "national electronic reporting tool," which at least one State Party was said to be developing. Overall, there was an expressed interest in online submissions, as such a system would decrease the time required to complete CBMs, possibly increasing participation rates. Such a system, it was suggested, would nonetheless require "point of contact" or "central editor" to sign off on the final submission.

A flexible deadline was also proposed, which would allow States Parties to submit their CBMs at any time. This was described as a "dynamic system," whereas the current 15 April deadline was described as a "static system." Although workshop participants acknowledged that it would be useful to permit States Parties to update their CBMs at any time, a fixed deadline was still required.

Informal translations were proposed as a means of providing CBMs in more languages, which, in turn, might help to enhance submission rates. However, several participants argued that translations should be "official," and that official translations are expensive.

A number of participants also picked up on the possibility of providing more opportunities for the analysis of, and discussion on, CBMs. On one level, it was suggested that ISU statistics, as well as the analysis conducted by civil society, offers a useful starting point for States Parties. On another level, it

was suggested that such analysis ultimately comes down to the individual efforts of States Parties, which can then be followed up under Article V on a bilateral basis. The possibility of introducing annual or biannual meetings during the intersessional process was also discussed. It was argued that such meetings would facilitate collective discussion, in a "spirit of cooperation," providing States Parties with an opportunity to discuss all aspects of the CBM process and its effectiveness. Some participants, however, expressed some hesitation about group discussion, suggesting that such dialogue is traditionally done on a bilateral basis.

Finally, a number of participants emphasized that CBMs, to the extent possible, should be shared with the public. It was argued that there are legitimate benefits to "public scrutiny," including increasing the potential for CBM analysis and feedback, as well as the possibility of reinforcing compliance with the Convention and encouraging others to submit.

- ***Plenary discussion on assembling the CBM package***

Plenary discussion

This plenary discussion addressed ideas for "assembling the CBM package." It was acknowledged that it is necessary to make CBMs more "interesting" to all States Parties. To achieve this, it was suggested, CBMs could be "reinvented" from the ground up or they could, preferably, be "revamped" in an effort to increase their performance.

It was emphasized that the content of the CBM forms should account for changes in the science and technology, politics and security context, as well highlighting the importance of national implementation and the need for cooperation and assistance. The key, it was argued, is to "tighten up" the CBM mechanism, bringing it in line with the needs and expectations of States Parties, ensuring increased participation in the CBM process and the exchange of information of greatest relevance to the Convention.

Successfully delivering the CBM package, it was argued, will require a "clear vision" and the broad support of States Parties and civil society. In particular, it was suggested, States Parties that are presently not participating in the CBM process need to be encouraged to get behind the proposed CBM plan, which may require emphasizing prospects for cooperation and assistance under Article X.

The CBM package, it was cautioned, cannot be expected to go through without resistance; modifications will need to be made to accommodate States Parties in the lead up to 2011. One participant suggested that it is important to "set the bar high" and then fall back if the necessary changes cannot be agreed at the Review Conference.

Summary, next steps and close

The closing comments of the third workshop outlined several options for how to move the CBM debate forward. It was acknowledged that it is important to develop a CBM package that captures the collective views of civil society, experts and States Parties, while bearing in mind that the CBM workshop series does not speak for States Parties.

It was suggested that reports could be drawn up by CBM workshop participants, as well as other interested parties, to document the suggested proposals to improve the CBM mechanism and to invite broader engagement. It was also suggested that States Parties could prepare working papers for the Meeting of Experts, Meeting of States Parties, and the Prep Com, outlining specific proposals. It was felt that the discussion on CBMs could be further facilitated through “e-task force” groups, and it was also proposed that a meeting about the workshops should be held in the margins of the 2010 Meeting of Experts.

Evolving Themes

A number of key themes emerged over the course of the three workshops, including what the CBM mechanism is and what it is not; the relatively low level of participation; the changing political, security and scientific contexts; improvements to the content of the existing CBM forms; potential procedural changes to the CBM mechanism; and the role of civil society.

The objective of the CBM mechanism

Workshop participants considered the CBM mechanism to predominately serve as a means of communication, providing States Parties with an opportunity to openly share information on the peaceful applications of biology. By exchanging information in this way, transparency is enhanced and confidence between States Parties is built and maintained.

It was emphasized that the mechanism should not be confused with a verification system, although it could form part of a verification system. It was also emphasized that the mechanism is not a compliance assessment mechanism in the way other BWC mechanisms are, such as the consultation and cooperation procedure under Article V, the complaint procedure under Article VI, and UN investigations. The CBM mechanism does not ensure compliance, but it may contribute to compliance.

It was stressed that the submission of complete and accurate CBM returns on an annual basis is an obligation under the Convention, and should not be viewed as a voluntary undertaking.

Level of participation

Increasing participation in the CBM information exchange was seen as a clear opportunity to enhance the success of the mechanism. Indeed, it was noted that without increasing the quantity of CBM declarations, the mechanism might actually contradict its intended purpose and *decrease* confidence between States Parties.

A number of proposals were made to encourage participation by more States Parties. Providing assistance to non-participants was seen as key, but other efforts were also considered important, such as: providing submission guidelines; sending reminders about the 15 April deadline; returning a copy of the previous year's submission; regional workshops on national implementation and data collection and collation, and other outreach activities aimed at reminding States Parties of their obligation to submit complete, accurate and annual CBMs; streamlining the CBM forms and making the CBM submission process more intuitive, easier and faster to complete.

The political, security and scientific contexts

Presentations on the historical circumstances in which the CBM mechanism was first agreed highlighted the contingent political, security and scientific contexts in which the modalities were developed. Much of the information requested in the CBM forms was still considered to be relevant today, but it was suggested that the forms could be updated to reflect the present political and security contexts – in which the biological weapons threat from non-state actors has become much more prominent – as well as to reflect scientific and technological advances. Updating the forms should take an evolutionary approach, favouring incremental modifications to the existing CBM mechanism, rather than a revolutionary approach, where the modalities would be reconfigured from scratch.

The content of the CBM forms

A number of suggestions were made on how to modify the questions asked on the CBM forms to make them clearer and more relevant in today's context, thereby improving the quality of the information exchanged through the CBM mechanism.

CBM A part 2, on active biodefence programmes, is arguably the most pertinent CBM to the BWC and was considered in detail during the workshop series. It was felt that the focus of the form should be on BSL4 laboratories and on biodefence facilities working on experiments or technologies of concern, such as experiments enhancing the virulence of pathogens or aerosol technology. At the same time, however, participants expressed an interest in not discouraging States Parties from sharing information on other laboratories that conduct experiments of concern or that work with dangerous pathogens at lower containment levels. It was suggested that all States Parties should be able to, and should have the opportunity to, communicate information on the types of pathogens they work with and where these pathogens are held. The importance of providing information on both military and civilian biodefence research and development activities in this form was also stressed, particularly in light of the last decade's rapid expansion of biopreparedness and protection programmes. Finally, a new addition to this form that seemed to gain a great deal of traction at the workshops was a question on national oversight processes, training and codes of conduct for biodefence facilities.

It was emphasised that, in today's context, it is less important to clarify "what states possess" and more important to clarify "how biology is being used" for peaceful purposes and how this work is being overseen. Form A part 1, on research facilities, was identified as particularly conducive to achieving this aim; as was Form E, on legislation. It was felt that national implementation efforts, broadly understood, should form a central part of Form E.

Suggestions for more detailed revisions are listed in Appendices B and C.

Procedural changes

Hand-in-hand with the discussion on improving the content of the CBM forms were discussions on improving the usability of CBM forms, making their completion more intuitive and user-friendly, and on modernizing the reporting process, moving towards a comprehensive information management system. There were also some discussions about changing the name of "Confidence-Building Measures" to something that more closely conveys their purpose, such as "Information Exchange" or "Transparency Measures."

The workshops also considered the introduction of a "cycle of engagement," which would offer feedback in response to States Parties' declarations. This could take the form of annual presentations of declarations, and the idea of restricting these presentations to States Parties participating in the CBM process only was raised.

Finally, in the interest of transparency, it was suggested that as much information as a possible should be made public, while protecting sensitive information and respecting the wishes of States Parties to choose for themselves.

The role of civil society

Opening up the CBM mechanism to the public became a theme in its own right during the workshops. It was highlighted that the knowledge, experience and expertise of civil society can contribute to the CBM communication process and to enhancing transparency between States Parties in several ways, including through: assisting States Parties to collect and collate CBM information; monitoring Sates Parties' biodefence activities; collecting data from open sources; analyzing and processing data to generate accessible information; and, ultimately, by bringing this information into the public sphere.

Appendix A: Agreed Forms for the Submission of CBMs from the Final Declaration of the Third Review Conference (BWC/CONF.III/23)

At the Third Review Conference it was agreed that all States Parties present the following declaration:

1. Declaration form on Nothing to Declare or Nothing New to Declare for use in the information exchange

Measure	Nothing to declare	Nothing new to declare
A, part 1	☐	☐
A, part 2 (i)	☐	☐
A, part 2 (ii)	☐	☐
A, part 2 (iii)	☐	☐
B (I)	☐	☐
B (ii)	☐	☐
C	☐	☐
D	☐	☐
E	☐	☐
F	☐	☐
G	☐	☐

(Please mark the appropriate box(es) for each measure, with a tick.)

Date: _____

State Party to the Convention: _____

2. CONFIDENCE-BUILDING MEASURE A:

Part 1: Exchange of data on research centres and laboratories

At the Third Review Conference it was agreed that States Parties continue to implement the following:

> AExchange of data, including name, location, scope and general description of activities, on research centres and laboratories that meet very high national or international safety standards established for handling, for permitted purposes, biological materials that pose a high individual and community risk or specialize in permitted biological activities directly related to the Convention.≅

Modalities

The Third Review Conference agreed that data should be provided by States Parties on each facility, within their territory or under their jurisdiction or control anywhere, which has any maximum containment laboratories meeting those criteria for such maximum containment laboratories as specified in the 1983 WHO Laboratory Biosafety Manual such as those designated as biosafety level 4 (BL4) or P4 or equivalent standards.

Exchange of data on research centres and laboratories[1]

1. Name(s) of facility[2] _____

2. Responsible public or private organization or company _____
_____

3. Location and postal address _____
_____
_____
_____

4. Source(s) of financing of the reported activity, including indication if the activity is wholly or partly financed by the Ministry of Defence

_____

5. Number of maximum containment units[3] within the research centre and/or laboratory, with an indication of their respective size (m^2)

_____

6. If no maximum containment unit, indicate highest level of protection

_____

7. Scope and general description of activities, including type(s) of micro-organisms and/or toxins as appropriate

_____
_____
_____

[1] The containment units which are fixed patient treatment modules, integrated with laboratories, should be identified separately.

[2] For facilities with maximum containment units participating in the national biological defence research and development programme, please fill in name of facility and mark ADeclared in accordance with Form A, part 2 (iii)≅.

[3] In accordance with the 1983 WHO Laboratory Biosafety Manual, or equivalent.

Part 2: Exchange of information on national biological defence research and development programmes

At the Third Review Conference it was agreed that States Parties are to implement the following:

In the interest of increasing the transparency of national research and development programmes on biological defence, the States Parties will declare whether or not they conduct such programmes. States Parties agreed to provide, annually, detailed information on their biological defence research and development programmes including summaries of the objectives and costs of effort performed by contractors and in other facilities. If no biological defence research and development programme is being conducted, a Anull≅ report will be provided.

States Parties will make declarations in accordance with the attached forms, which require the following information:

(1) the objective and summary of the research and development activities under way indicating whether work is conducted in the following areas: prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research;

(2) whether contractor or other non-defence facilities are utilized and the total funding provided to that portion of the programme;

(3) the organizational structure of the programme and its reporting relationships; and

(4) the following information concerning the defence and other governmental facilities in which the biological defence research and development programme is concentrated;

(a) location;
(b) the floor areas (sqM) of the facilities including that dedicated to each of BL2, BL3 and BL4 level laboratories;
(c) the total number of staff employed, including those contracted full time for more than six months;
(d) numbers of staff reported in (c) by the following categories: civilian, military, scientists, technicians, engineers, support and administrative staff;
(e) a list of the scientific disciplines of the scientific/engineering staff;
(f) the source and funding levels in the following three areas: research, development, and test and evaluation; and
(g) the policy regarding publication and a list of publicly-available papers and reports.

National biological defence research and development programme Declaration

Is there a national programme to conduct biological defence research and development within the territory of the State Party, under its jurisdiction or control anywhere? Activities of such a programme would include prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

Yes/No

If the answer is Yes, complete Form A, part 2 (ii) which will provide a description of the programme.

National biological defence research and development programme

Description

1. State the objectives and funding of the programme and summarize the principal research and development activities conducted in the programme. Areas to be addressed shall include: prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research.

2. State the total funding for the programme and its source.

3. Are aspects of this programme conducted under contract with industry, academic institutions, or in other non-defence facilities?

Yes/No

4. If yes, what proportion of the total funds for the programme is expended in these contracted or other facilities?

5. Summarize the objectives and research areas of the programme performed by contractors and in other facilities with the funds identified under paragraph 4.

6. Provide a diagram of the organizational structure of the programme and the reporting relationships (include individual facilities participating in the programme).

7. Provide a declaration in accordance with Form A, part 2 (iii) for each facility, both governmental and non-governmental, which has a substantial proportion of its resources devoted to the national biological defence research and development programme, within the territory of the reporting State, or under its jurisdiction or control anywhere.

National biological defence research and development programme

Facilities

Complete a form for each facility declared in accordance with paragraph 7 in Form A, part 2 (ii).

In shared facilities, provide the following information for the biological defence research and development portion only.

1. What is the name of the facility?

2. Where is it located (include both address and geographical location)?

3. Floor area of laboratory areas by containment level:

   BL2 _____ (sqM)

   BL3 _____ (sqM)

   BL4 _____ (sqM)

   Total laboratory floor area _____ (sqM)

4. The organizational structure of each facility.

   (I) Total number of personnel _____

   (ii) Division of personnel:

   Military _____

   Civilian _____

   (iii) Division of personnel by category:

   Scientists _____

   Engineers _____

   Technicians _____

   Administration and support staff _____

   (iv) List the scientific disciplines represented in the scientific/ engineering staff.

   (v) Are contractor staff working in the facility? If so, provide an

approximate number.

(vi) What is (are) the source(s) of funding for the work conducted in the facility, including indication if activity is wholly or partly financed by the Ministry of Defence?

(vii) What are the funding levels for the following programme areas:

Research _____

Development _____

Test and evaluation _____

(viii) Briefly describe the publication policy of the facility:

(ix) Provide a list of publicly-available papers and reports resulting from the work during the previous 12 months. (To include authors, titles and full references.)

5. Briefly describe the biological defence work carried out at the facility, including type(s) of micro-organisms[4] and/or toxins studied, as well as outdoor studies of biological aerosols.

[4] Including viruses and prions.

3. CONFIDENCE-BUILDING MEASURE B:

Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins

At the Third Review Conference it was agreed that States Parties continue to implement the following:

Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins, and on all such events that seem to deviate from the normal pattern as regards type, development, place, or time of occurrence. The information provided on events that deviate from the norm will include, as soon as it is available, data on the type of disease, approximate area affected, and number of cases.

Modalities

The Third Review Conference agreed the following definition:

An outbreak or epidemic is the occurrence of an unusually large or unexpected number of cases of an illness or health-related event in a given place at a given time. The number of cases considered as unusual will vary according to the illness or event and the community concerned.

Furthermore, reference was made to the following definitions:

An epidemic of infectious disease is defined as the occurrence of an unusually large or unexpected number of cases of a disease known or suspected to be of infectious origin, for a given place and time. It is usually a rapidly evolving situation, requiring a rapid response (WHO internal document CDS/Mtg/82.1).

The occurrence in a community or region of cases of an illness, specific health-related behaviour, or other health-related events clearly in excess of normal expectancy. The community or region, and the time period in which the cases occur, are specified precisely. The number of cases indicating the presence of an epidemic will vary according to the agent, size and type of population exposed, previous experience or lack of exposure to the disease, and time and place of occurrence: epidemicity is thus relative to usual frequency of the disease in the same area, among the specified population, at the same season of the year. A single case of a communicable disease long absent from a population or first invasion by a disease not previously recognized in that area requires immediate reporting and full field investigation: two cases of such a disease associated in time and place may be sufficient evidence to be considered an epidemic. (J.M. Last, A Dictionary of Epidemiology, Oxford University Press, New York, Oxford, Toronto, 1983.)

The Third Review Conference agreed on the following:

1. In determining what constitutes an outbreak States Parties are recommended to take guidance from the above.

2. Since no universal standards exist for what might constitute a deviation from the normal pattern, States Parties agreed to utilize fully existing national reporting systems on human diseases as well as animal and plant diseases, where possible, and systems within the WHO to provide annual update of background information on diseases caused by organisms which meet the criteria for risk groups II, III and IV according to the classification in the 1983 WHO Laboratory Biosafety Manual, the occurrence of which, in their respective areas, does not necessarily constitute a deviation from normal patterns.[5]

3. Exchange of data on outbreaks that seem to deviate from the normal pattern is considered particularly important in the following cases:

- when the cause of the outbreak cannot be readily determined or the causative agent[6] is difficult to diagnose,

- when the disease may be caused by organisms which meet the criteria for risk groups III or IV, according to the classification in the 1983 WHO Laboratory Biosafety Manual,

- when the causative agent is exotic to a given region,

- when the disease follows an unusual pattern of development,

- when the disease occurs in the vicinity of research centres and laboratories subject to exchange of data under item A,

- when suspicions arise of the possible occurrence of a new disease.

4. In order to enhance confidence, an initial report of an outbreak of an infectious disease or a similar occurrence that deviate from the normal pattern should be given promptly after cognizance of the outbreak and should be followed up by annual reports.

To enable States Parties to follow a standardized procedure, the Conference has agreed that Form B (ii) should be used, to the extent information is known and/or applicable, for the exchange of initial as well as annual information.

5. In order to improve international cooperation in the field of peaceful bacteriological (biological) activities and in order to prevent or reduce the occurrence of ambiguities, doubts and suspicions, States Parties are encouraged to invite experts from other States Parties to assist in the handling of an outbreak, and to respond favourably to such invitations.

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[5] This information should be provided in accordance with Form B (I).

[6] It is understood that this may include organisms made pathogenic by molecular biology techniques, such as genetic engineering.

Form B (I)

Background information on outbreaks of reportable infectious diseases

Disease		Number of cases per year			
	1988	1989	1990	1991	1992

Form B (ii)

Information on outbreaks of infectious diseases and similar occurrences, that seem to deviate from the normal pattern

1. Time of cognizance of the outbreak .....

2. Location and approximate area affected .....

3. Type of disease/intoxication .....

4. Suspected source of disease/ intoxication .....

5. Possible causative agent(s) .....

6. Main characteristics of systems .....

7. Detailed symptoms, when applicable .....

   - respiratory .....
   - circulatory .....
   - neurological/behavioural .....
   - intestinal .....
   - dermatological .....
   - nephrological .....
   - other .....

8. Deviation(s) from the normal pattern as regards

   - type .....
   - development .....
   - place of occurrence .....
   - time of occurrence .....
   - symptoms .....
   - virulence pattern .....
   - drug resistance pattern .....
   - agent(s) difficult to diagnose .....
   - presence of unusual vectors .....
   - other .....

9. Approximate number of primary cases .....

10. Approximate number of total cases .....

11. Number of deaths .....

12. Development of the outbreak .....

13. Measures taken .....

4. CONFIDENCE-BUILDING MEASURE C:

- Encouragement of publication of results and promotion of use of knowledge

At the Third Review Conference it was agreed that States parties continue to implement the following:

> AEncouragement of publication of results of biological research directly related to the Convention, in scientific journals generally available to States parties, as well as promotion of use for permitted purposes of knowledge gained in this research.≅

Modalities

The Third Review Conference agreed on the following:

1. It is recommended that basic research in biosciences, and particularly that directly related to the Convention should generally be unclassified and that applied research to the extent possible, without infringing on national and commercial interests, should also be unclassified.

2. States parties are encouraged to provide information on their policy as regards publication of results of biological research, indicating, *inter alia*, their policies as regards publication of results of research carried out in research centres and laboratories subject to exchange of information under item A and publication of research on outbreaks of diseases covered by item B, and to provide information on relevant scientific journals and other relevant scientific publications generally available to States parties.

3. The Third Review Conference discussed the question of cooperation and assistance as regards the safe handling of biological material covered by the Convention. It concluded that other international forums were engaged in this field and expressed its support for efforts aimed at enhancing such cooperation.

5. CONFIDENCE-BUILDING MEASURE D:

- Active promotion of contacts

At the Third Review Conference it was agreed that States parties continue to implement the following:

> AActive promotion of contacts between scientists, other experts and facilities engaged in biological research directly related to the Convention, including exchanges and visits for joint research on a mutually agreed basis.≅

Modalities

The Third Review Conference agreed on the following:

In order to actively promote professional contacts between scientists, joint research projects and other activities aimed at preventing or reducing the occurrence of ambiguities, doubts and suspicions and at improving international cooperation in the field of peaceful bacteriological (biological) activities, States parties are encouraged to provide information, to the extent possible:

- on planned international conferences, seminars, symposia and similar events dealing with biological research directly related to the Convention,

- on other opportunities for exchange of scientists, joint research or other measures to promote contacts between scientists engaged in biological research directly related to the Convention.

To enable States parties to follow a standardized procedure, the Third Review Conference has agreed that Form D should be used for exchange of information under this item.

Form D

Active promotion of contacts

1. Planned international conferences, symposia, seminars, and other similar forums for exchange

For each such event, the following information should be provided:

- name of the conference, etc. .....
- arranging organization(s), etc. .....
- time .....
- place .....
- main subject(s) for the conference, etc. .....

.....

- conditions for participation .....

.....

- point of contact for further information, registration, etc. .....

.....

.....

2. Information regarding other opportunities

.....

.....

.....

6. CONFIDENCE-BUILDING MEASURE E:

- Declaration of legislation, regulations and other measures

At the Third Review Conference the States parties agreed to implement the following:

As an indication of the measures which they have taken to implement the Convention, States parties shall declare whether they have legislation, regulations or other measures:

(a) to prohibit the development, production, stockpiling, acquisition or retention of microbial or other biological agents, or toxins, weapons, equipment and means of delivery, specified in Article I of the Convention, within their territory or anywhere under their jurisdiction or control;

(b) in relation to the export or import of micro-organisms pathogenic to man, animals and plants or of toxins in accordance with the Convention;

States parties shall complete the attached form (Form E) and shall be prepared to submit copies of the legislation or regulations, or written details of other measures on request to the United Nations Department for Disarmament Affairs or to an individual State party. On an annual basis States parties shall indicate, also on the attached form, whether or not there has been any amendment to their legislation, regulations or other measures.

Form E

Declaration of legislation, regulations and other measures

Relating to	Amended measures since last year	Legislation	Regulations	Other
(a)	Development, production stockpiling, acquisition or retention of microbial or other biological agents, or toxins, weapons, equipment and means of delivery specified in Article I Yes/No	Yes/No	Yes/No	Yes/No
(b)	Exports of micro-organisms[7] Yes/No and toxins	Yes/No	Yes/No	Yes/No
(c)	Imports of micro-organisms[7] Yes/No and toxins	Yes/No	Yes/No	Yes/No

[7] Micro-organisms pathogenic to man, animals and plants in accordance with the Convention.

7. CONFIDENCE-BUILDING MEASURE F:

- Declaration of past activities in offensive and/or defensive biological research and development programmes

In the interest of increasing transparency and openness, States parties shall declare whether or not they conducted any offensive and/or defensive biological research and development programmes since 1 January 1946.

If so, States parties shall provide information on such programmes, in accordance with Form F.

Form F

Declaration of past activities in offensive and/or defensive biological research and development programmes

1. Date of entry into force of the Convention for the State party.

2. Past offensive biological research and development programmes:

   - Yes - No

   - Period(s) of activities

   - Summary of the research and development activities indicating whether work was performed concerning production, test and evaluation, weaponization, stockpiling of biological agents, the destruction programme of such agents and weapons, and other related research.

3. Past defensive biological research and development programmes:

   - Yes - No

   - Period(s) of activities

   - Summary of the research and development activities indicating whether or not work was conducted in the following areas: prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination, and other related research, with location if possible.

8. CONFIDENCE-BUILDING MEASURE G:

- Declaration of vaccine production facilities

To further increase the transparency of biological research and development related to the Convention and to broaden scientific and technical knowledge as agreed in Article X, each State party will declare all facilities, both governmental and non-governmental, within its territory or under its jurisdiction or control anywhere, producing vaccines licensed by the State party for the protection of humans. Information shall be provided on Form G attached.

Form G

Declaration of vaccine production facilities

1. Name of facility:

2. Location (mailing address):

3. General description of the types of diseases covered

Appendix B

Compendium of Proposals to Improve the CBM Mechanism

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July 2009

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Key findings

Since the current Confidence Building Measures (CBMs) were introduced in 1991, a number of proposals have been made to improve the CBM mechanism. These proposals seek to:

1. Review the questions asked on the CBM forms, ensuring that they are clear, relevant and contribute to enhancing transparency and building trust between States Parties;

2. Improve the format of the CBM forms, making their completion more intuitive and user-friendly, while also addressing the need to make CBMs available in a wider number of languages, ensuring universal accessibility;

3. Modernise the reporting process, making greater use of electronic CBM forms and online resources, moving towards a comprehensive web-based information management system that is accessible to all States Parties;

4. Improve national data collection processes, encouraging improved collator rotation through handover notes, and offering guidelines, completed CBM forms, data collection and collation workshops and one-to-one assistance;

5. Strengthen the role of the Implementation Support Unit (ISU), moving towards an administrative office that will have the appropriate authority and the resources to facilitate the implementation of the CBM mechanism;

6. Promote cooperation between States Parties, encouraging bilateral and multilateral dialogue, allowing States Parties, which are in a position to do so, to assist other States Parties struggling to fulfill their CBM obligations;

7. Invite civil society groups and international organisations to play a role in the CBM information exchange, drawing on their expertise and energy to help address problems with the CBM mechanism and seek possible solutions.

In the lead-up to the Seventh Review Conference in 2011, it is hoped that this compendium of proposals to date will help States Parties and experts engage in meaningful and productive debate concerning the future of the CBMs.

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Proposals to improve the CBM mechanism

The aim of the CBM mechanism is to:

> strengthen the authority of the Convention and to enhance confidence in the implementation of its provisions… in order to prevent or reduce the occurrence of ambiguities, doubts and suspicions, and in order to improve international co-operation in the field of peaceful bacteriological (biological) activities.

The CBMs were launched at the Second Review Conference in 1986; procedures for the annual exchange of data were developed at the 1987 Ad Hoc Group Meeting of Scientific and Technical Experts; and were modified and expanded at the Third Review Conference in 1991. Since this time, the mechanism and forms (A-G) have gone unchanged.

Many States Parties have emphasized a need to review the CBM mechanism and consider proposals to improve its deficiencies. The introduction of the Implementation Support Unit (ISU), agreed at the Sixth Review Conference in 2006, signalled a commitment by States Parties to strengthen the mechanism, as the ISU is explicitly tasked with administering the CBM process. Although the introduction of the ISU represents a significant step forward, there remains considerable scope for further improvement.

A number of proposals and recommendations have been made over the last two decades by States Parties, experts, civil society groups and others to improve the CBM mechanism. These proposals and recommendations include calls to:

1. Review the questions asked on the CBM forms;
2. Improve the usability of the CBM forms;
3. Modernise the reporting process;
4. Improve national data collection processes;
5. Make administrative improvements;
6. Promote cooperation between States Parties; and
7. Invite civil society groups and international organisations to play a role in the CBM process.

This compendium provides a comprehensive review of these proposals and recommendations to support States Parties and experts to engage in informed and productive debate about the future of CBMs.

The compendium was funded by the Political Affairs Secretariat of the Swiss Federal Department of Foreign Affairs to complement the 2009-10 series of CBM workshops hosted by the Geneva Forum and jointly sponsored by Germany, Norway and Switzerland.

1. Review the questions asked on the CBM forms

A number of actors have suggested that the questions asked on the CBM forms should be reviewed and amended to address any perceived difficulties, ambiguities or gaps. It is believed that by making the questions asked on the CBM forms clearer and more relevant, more States Parties will participate in the CBM process and the information provided in the CBM submissions will be more accurate and consistent.

Proposals to improve the quality of the questions asked on the CBM forms typically suggest implementing one or more of the following changes: (1) clarify an existing question or form; (2) add an additional question or form; (3) remove an existing question or form.

Although a number of modifications have been proposed, many actors seem to agree that the current forms cannot easily be ‘slimmed down’ and still retain their descriptive value; nor can they be substantially ‘bulked up’, as more lengthy or intrusive questions could potentially deter States Parties from participating in the CBM process. With this in mind, proposals tend towards subtle modifications, recommending improved clarity and precision over sweeping reform.

Form 0: Declaration form on 'Nothing to Declare' or 'Nothing New to Declare' for use in the information exchange

Form 0 is intended to simplify the reporting process, allowing States Parties to indicate upfront whether they have (a) 'nothing to declare' or (b) 'nothing new to declare' for each CBM measure.

In practice, however, States Parties have found the wording of Form 0 confusing, resulting in incomplete and/or inaccurate submissions. Moreover, as the preliminary declaration can permit States Parties to provide no information (i.e. 'nothing to declare' or 'nothing new to declare' boxes are ticked for each measure), ambiguities in this form are particularly damaging to the outcome of the CBM process. Table 1 outlines proposals to redesign and clarify this form.

Proposed by	Proposed modifications
France on behalf of the European Union BWC/CONF.VI/WP.4 20 October 2006	• Clarify 'nothing to declare' or 'nothing new to declare' • Redesign format along similar lines as the following: Does your country have anything to declare this year on Measure A, part I? (a) Yes, it has something to declare in this form for the first time (please complete form); (b) Yes, it has previously declared something in this form, and needs to update or modify details (please complete form); (c) Yes, but this information has already been declared since [year] and has not changed; (no need to complete form); (d) No, it has nothing at all to declare on this form • Repeat these four questions for each of the forms (A-G)
Research Group for Biological Arms Control (RGBAC), Isla, Occasional Paper No.3, March 2007	• Change title to read: 'Exchange of general information and overview of submitted data' • Redesign format along similar lines as the following: (a) Yes, a declaration is made and is the only valid information for this topic; (b) No, a declaration is not made, information submitted in the year 'x' remains valid; (c) No, there is nothing to declare • Request date of entry into force of the Convention • Request national CBM contact point • Request information on presence of national biological defence programme • Include relevant section of Form 0 at the start of each subsequent form

Table 1: Proposed modifications to Form 0

Form A1: Exchange of data on research centres and laboratories

Form A1 requests that States Parties exchange information on "research centres and laboratories that meet very high national or international safety standards" or "specialize in permitted biological activities directly related to the Convention".

Due to the dual-use potential of high containment laboratories, Form A1 is considered particularly important to establishing transparency and building trust between States Parties. In order to enhance the effectiveness of Form A1, a number of proposals have been made to explicitly clarify its wording, particularly with regard to 'directly related to the Convention', and to focus questions on maximum containment laboratories. Table 2 outlines proposals that seek to achieve these aims.

Proposed by	Proposed modifications
SIPRI Chemical and Biological Warfare Studies No.10, ed. Geissler, 1990	• Define 'directly related to the Convention' • Change wording to include facilities which are not 'specialized' but which are 'involved in' activities that are directly related to the Convention • Provide an opportunity to state that 'there are no, or no further, research centres or laboratories within or outside the territory of the reporting State Party' • Request that States Parties declare where protective encapsulating suits are being used with Risk Group III and IV biological agents and toxins • Request States Parties declare where research with specific organisms is being carried out in biosafety level 2 (BSL2) facilities
The USSR BWC/CONF.III/17 24 September 1991	• Request information on laboratory safety rules in force at the facility, including those with vaccinations, observation and quarantines
Hungary BWC/CONF.III/17 24 September 1991	• Request information on equipment and materials used in declared facilities
The Netherlands BWC/AD HOC GROUP/6 29 June 1995	• Make this form mandatory within legally binding instrument
Hunger, Key Points for Fourth Review Conference, September 1996	• Clarify need to include information on all facilities with maximum containment laboratories • Omit 'research' from the title and insert 'including research facilities' at the end of the title
South Africa BWC/CONF.V/COW/WP.1 16 November 2001	• Request information on high security facilities that handle and work with Group IV animal pathogens • As a basis for consideration, South Africa has prepared an amended text describing the modalities for CBM A
RGBAC, Isla, Occasional Paper No.3, March 2007	• Limit form to maximum containment research facilities • Request publication list and information on publication policy for declared facility
France on behalf of the European Union BWC/CONF.VI/WP.4 20 October 2006	• Clarify need to include BSL4 laboratories, while not restricting States Parties from including other laboratories that meet very high safety standards

Table 2: Proposed modifications to Form A1

Form A2: Exchange of information on national biological defence research and development programmes

Form A2 is critical to the success of the information exchange, as this form requires that States Parties provide a detailed account of biodefence activities, staffing, infrastructure, funding, related publications and publication policies.

Although Form A2 has been commended for its semi-open question format, which allows States Parties to elaborate on their biodefence programmes, a number of proposals have been made to broaden its scope and to make the questions asked more relevant. This would allow States Parties to explore at greater length the most significant issues to the BWC. Table 3 outlines proposals that seek to achieve these aims.

Proposed by	Proposed modifications
Hungary BWC/CONF.III/17 24 September 1991	• Request that States Parties declare whether or not training of defence against biological warfare is practised in the armed forces and encourage exchange visits to observe biodefence exercises • Encourage direct communication between facilities (e.g. request telephone and fax numbers of facilities declared in national report)
The Netherlands BWC/AD HOC GROUP/6 29 June 1995	• Make this form mandatory within legally binding instrument
Hunger, Key Points for Fourth Review Conference, September 1996	• Broaden the focus of Form A2 to include all aspects of biodefence programme • Omit 'research and development' from the title and insert 'including research programmes' at the end of the title
Hunger and Isla, HCBAC, Disarmament Forum No.3, 2006	• Form A2 (iii) is confusing and needs to be amended • Unclear whether the total number of personnel working at biodefence facility should include or exclude the number of contractor staff
RGBAC, Isla, Occasional Paper No.3, March 2007	• Change title to read: 'Exchange of information on national biological defence programmes' • Move Form A2 (i) to Form 0 • Clarify declaration requirement for Form A2 (iii) requiring any facility with more than 50% of its total finances devoted to biodefence to be declared • List all other facilities involved in biodefence programmes in Form A2 (ii) • Expand Form A2 (iii) paragraphs (viii) and (ix) to include not only publications but all forms of research results • Request information on the promotion of contacts between scientists such as conferences, symposia and seminars organised at declared facility • Add Form A2 (iv) requesting information on military vaccination programmes, military biodefence training exercises and any other relevant information
Pugwash Study Group, Hart, Discussion Paper, November 2008	• Develop guidelines for describing the level of funding and general type of activity in biodefence relevant activities
Lentzos, Preparing the Ground for the CBM Content Debate, Swiss-Funded Study, December 2008	• Add reference points to existing questions, including: proportion of defence budget spent on biodefence rather than biodefence figure alone; distribution of scientists according to disciplines rather than disciplines represented; number of facilities dealing with highly dangerous pathogens and number of personnel involved rather than the square-meters of BSL2, BSL3 and BSL4 laboratories • Add new questions, including: whether aerosol testing is carried out; number and species of animals used in biodefence research per year; proportion of open source to internal/restricted publications at facility

Table 3: Proposed modifications to Form A2

Form B: Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins

Form B requests that States Parties provide information on disease outbreaks that "deviate from the normal pattern as regards type, development, place, or time of occurrence".

Although potentially a very useful form, as an unusual disease outbreak could point to an intentional or unintentional biosecurity breach, Form B has been criticized for focusing exclusively on human diseases; providing insufficient information on the specific biological agents and diseases of interest to the BWC; and for overlapping with the mandate of the World Health Organization (WHO). These deficiencies are further complicated by the fact that the information submitted in Form B tends to be inaccurate and incomplete. Table 4 outlines proposals to improve this form.

Proposed by	Proposed modifications
SIPRI Chemical and Biological Warfare Studies No.10, ed. Geissler, 1990	• List groups of biological and toxin agents that must be taken into account when reporting on facilities and outbreaks • Request information regarding vector research, unusual vector occurrences, and the occurrence of vectors harbouring Risk Group III and IV agents • Include toxins more specifically in modalities
SIPRI Chemical and Biological Warfare Studies No.12, ed. Lundin, 1991	• Request information on infectious animal and plant pathogen research and unusual outbreaks of animal and plant diseases caused by pathogens/toxins • Request information on vector research and unusual vector occurrences
The USSR BWC/CONF.III/17 24 September 1991	• Discontinue the exchange of information on unusual outbreaks of infectious disease, this data is already presented by each State Party to the WHO
Hunger, Key Points for Fourth Review Conference, September 1996	• Remove Form B, eliminating unnecessary duplication in reporting outbreaks, while encouraging States Parties to continue to make declarations of disease outbreaks to the WHO, the World Organization for Animal Health (OIE) and the Food and Agriculture Organization (FAO) • Clarify diseases to be declared and what features make an outbreak 'unusual'
The European Union BWC/CONF.V/COW/1 13 December 2001	• Request information on outbreaks of contagious animal and plant pathogens
RGBAC, Isla, Occasional Paper No.3, March 2007	• Remove Form B or expand it to include information on animal and plant diseases
RGBAC, Zmorzynska, Occasional Paper No.4, December 2007	• Remove possibility of ticking 'nothing to declare' or 'nothing new to declare' in Form 0, as there is always something to declare, be it the presence or absence of a disease • Require a new declaration each year • List specific human, animal and plant diseases for which information must be provided, while not restricting States Parties from reporting other diseases • If no case numbers are provided, request why this is the case • Request information on events of biosecurity concern, such as accidents in biodefence laboratories and incidents with weaponised biological material • As basis for consideration, the RGBAC has prepared an amended Form B
RGBAC, Statement to States Parties, December 2007	• Limit Form B to serious biosecurity related events such as bioweapons attacks and biodefence laboratory accidents • Use the WHO for routine disease data collection

Table 4: Proposed modifications to Form B

Form C: Encouragement of publication of results and promotion of use of knowledge

Form C encourages States Parties to make the results of research in the life sciences, particularly research that is directly related to the Convention, unclassified and requests that States Parties provide information on relevant publications and publication policies.

Form C, as a means of promoting the open exchange of knowledge between States Parties, has the potential to be a highly valuable tool. The form, however, has been criticized for being impractical and lacking focus. It is often considered unfeasible for a State Party to provide an exhaustive list of publications and the information contained in many publications lacks relevance to the Convention. Table 5 outlines proposals that seek to address these deficiencies.

Proposed by	Proposed modifications
Hunger, Key Points for Fourth Review Conference, September 1996	• Limit scope to publications produced as a result of defence-funded work (including both work carried out at Ministry of Defence facilities and carried out under contract in academic and industrial facilities) • As a basis for consideration, Hunger has prepared a redesigned Form C
Chevrier and Hunger, Nonproliferation Review Vol.7 No.3, 2000	• Make surveillance of publications the responsibility of the BWC and not an obligation for States Parties • Invest in sufficient staff within the BWC to survey publications through publicly available sources
The European Union BWC/CONF.V/COW/1 13 December 2001	• Make form more focused and effective
France on behalf of the European Union BWC/CONF.VI/WP.4 20 October 2006	• Make a clear distinction between 'publications' and 'policy regarding publication', requesting 'publications of research centres and laboratories covering area of CBMs' and 'policy regarding the publication of results of biological research'
Hunger and Isla, HCBAC, Disarmament Forum No.3, 2006	• Limit publication lists to works of particular relevance to the Convention
RGBAC, Isla, Occasional Paper No.3, March 2007	• Remove Form C and request publication list and information on publication policy for declared facility in Form A1 and Form A2 (iii) instead • If the aim is to provide an indication of activities carried out at a facility, request other forms of research such as presentations, seminar papers, posters, patents and any other product coming out of relevant activities
Lentzos and Woodward, National Data Collection Processes for Submissions, Swiss-Funded Study, December 2007	• States Parties cannot be expected to list all publications

Table 5: Proposed modifications to Form C

Form D: Active promotion of contacts

Form D requests that States Parties provide information on planned international conferences, seminars, symposia and other opportunities for mutual exchange and collaboration between researchers in the life sciences.

As part of the overall aim of the CBMs, cooperation between researchers goes a long way towards building trust between States Parties through shared research experiences. There is some concern, however, that the effectiveness of this measure is diminished by the fact that States Parties receive insufficient advance notice of upcoming events; there is some confusion regarding whom to contact regarding opportunities for exchange; and there should be a stronger focus on defence-funded projects. Table 6 outlines proposals that seek to make Form D more explicit in regard to this information.

Proposed by	Proposed modifications
SIPRI Chemical and Biological Warfare Studies No.10, ed. Geissler, 1990	• Request information on planned defence-funded conferences and meetings
Hunger, Key Points for the Fourth Review Conference, September 1996	• Request that States Parties provide advance notice on conferences and related scientific contacts • Encourage them to provide an address for obtaining further information and for applying to participate
France on behalf of the European Union BWC/CONF.VI/WP.4 20 October 2006	• Include two headings: 'past seminars' and 'planned seminars'
RGBAC, Isla, Occasional Paper No.3, March 2007	• Remove Form D and request information on past events in Form A2 (iii) instead • Encourage States Parties to inform the United Nations Department of Disarmament Affairs (DDA) about relevant planned events • Encourage the DDA to publicise upcoming events on its website

Table 6: Proposed modifications to Form D

Form E: Declaration of legislation, regulations and other measures

Form E requests that States Parties provide information on legislation, regulations and other steps that their countries have taken to implement the BWC.

This form is considered critical to the success of the CBM regime as it provides States Parties with an opportunity to describe concrete actions taken to stop the development, production, stockpiling, acquisition and general misuse of infectious biological agents and toxins. Form E, however, is believed by many to be incomplete and in need of updating to include information on dual-use equipment and knowledge, codes of conduct, health and safety measures and bioterrorism prevention. Table 7 outlines proposals to expand Form E to include this information.

Proposed by	Proposed modifications
The European Union BWC/CONF.V/COW/1 13 December 2001	• Request information on transfer of microorganisms and toxins and related legislation, regulation and procedures, as well as transfer of dual-use equipment, health and safety issues and penal legislation
Pugwash Study Group, Roffey, Discussion Paper, December 2004	• Summarize situation concerning national implementation measures and propose further measures as appropriate
The United States BWC/CONF.VI/3 6 December 2006	• Request that States Parties include information regarding efforts to adopt national legislation within their CBM declarations • Request that States Parties adopt and enforce appropriate, effective laws and measures, such as export and border controls, to prevent non-state actors from acquiring and manufacturing WMD or related materials
Hunger and Isla, HCBAC, Disarmament Forum No.3, 2006	• Add a question on bioterrorism
RGBAC, Isla, Occasional Paper No.3, March 2007	• Expand Form E to cover measures aimed at preventing bioterrorism and the adoption and use of codes of conduct for life scientists • Expand declaration requirement on export and import measures to cover not only microorganisms and toxins, but also equipment and knowledge

Table 7: Proposed modifications to Form E

Form F: Declaration of past activities in offensive and/or defensive biological research and development programmes

Form F requests that States Parties declare when they entered the Convention and declare information regarding past bioweapons and/or biodefense programmes.

The importance of this measure, as a means of establishing transparency between States Parties, has motivated proposals to make Form D more comprehensive, requesting more specific information from States Parties and encouraging more frequent and more open discussion on past offensive/defensive activities. States Parties that are known to have had programmes, but who have not yet declared them, are encouraged to do so. States Parties that have made declarations are encouraged to update this information on a regular basis. Table 8 provides a summary of these proposals.

Proposed by	Proposed modifications
The Netherlands BWC/AD HOC GROUP/6 29 June 1995	• Make this form mandatory within legally binding instrument
Hunger, Key Points for Fourth Review Conference, September 1996	• Broaden scope of Form F to include all aspects of past national bioweapons and/or biodefence programmes
HCBAC, Isla, Occasional Paper No.1, June 2006	• Encourage countries who are known to have had offensive programmes, yet have not declared them, to do so • Maintain open answer format to encourage countries to provide any and all relevant information • Provide specific points of interest to ensure comprehensive disclosure of past activities • Encourage regular discussion on past activities and create a suitable forum for such discussion to occur
Hunger and Isla, HCBAC, Disarmament Forum No.3, 2006	• Introduce more detailed questions on categories of activities undertaken and on agents and facilities
RGBAC, Isla, Occasional Paper No. 3, March 2007	• Change title to read: 'Declaration of past activities in offensive and/or defensive biological weapons programmes' • Move question on entry into force of the Convention to Form 0 • Request more specific information on facilities, activities, organisms and military doctrine • Make updates obligatory at least every five years
Pugwash Study Group, Hart, Discussion Paper, November 2008	• Clarify past defensive and offensive biological weapons programmes (perhaps partly through the tabling of national papers that reflect additional archival research from a suitably distant period, such as prior to 1 January 1946 and the end of the Cold War could be another, eventual 'end point' cut-off date)

Table 8: Proposed modifications to Form F

Form G: Declaration of vaccine production facilities

Form G requests that States Parties provide information on human vaccine production facilities, including the name of the facility, its address and a general description of the diseases that are vaccinated against at the facility.

Form G has been criticized for being incomplete due to the fact that animal vaccine facilities, as well as facilities that produce biocontrol agents and plant inoculants, use much of the same equipment and technology and many of the same processes as human vaccine production facilities. This gap in Form G has motivated proposals to broaden the form to include questions that request this missing information. Table 9 provides a summary of these proposals.

Proposed by	Proposed modifications
Finland BWC/CONF.III/17 24 September 1991	• Request information on all facilities producing vaccines against toxins and/or pathogenic microorganisms whether for human or animal use, excluding very small production (e.g. production under 10,000 doses)
Canada BWC/CONF.III/17 24 September 1991	• Request information on all institutions, both civil and governmental, producing vaccines for the protection of humans and animals
The Netherlands BWC/AD HOC GROUP/6 29 June 1995	• Make this form mandatory within a legally binding instrument
Hunger, Key Points for Fourth Review Conference, September 1996	• Request information on animal vaccine production facilities • Broaden required information to include all licensed and non-licensed vaccine production facilities
South Africa BWC/CONF.V/COW/WP.1 16 November 2001	• Request information on animal vaccine production facilities • As a basis for consideration, South Africa has prepared an amended text describing the modalities for CBM G
RGBAC, Isla, Occasional Paper No.3, March 2007	• Change title to read: 'Declaration of facilities producing human vaccines, animal vaccines, biocontrol agents and plant inoculants' • Expand form to cover animal vaccine production facilities and facilities producing biocontrol agents and plant inoculants

Table 9: Proposed modifications to Form G

'Form H': New forms

A number of proposals have been made to add new forms that would extend the present requirements of CBMs. These forms (provisionally referred to as 'Form H') would provide room to address new and evolving issues that could further enhance transparency and build trust between States Parties. In light of rapid advancements in biotechnology since the CBMs were introduced; increasing concern over the use of these technologies by terrorist groups; as well as the presence of previous measures that were proposed but never adopted, 'Form H' has a critical role to play in ensuring that the CBMs remain relevant over time. Although Table 10 outlines a number of proposals, these proposals should be thought of as a preliminary list to be added to as necessary.

Proposed by	Proposed modifications
SIPRI Chemical and Biological Warfare Studies No.10, ed. Geissler, 1990	• Add prohibitions/provisions related to recombinant DNA research and military misuse of biotechnology
SIPRI Chemical and Biological Warfare Studies No.12, ed. Lundin, 1991	• Add form that requests information on vaccine development and inoculation programmes of armed forces • Add form that requests information on military contracts directly related to the Convention
Germany BWC/CONF.III/17 24 September 1991	• Add form that requests information on open-air release of microorganisms, viruses or simulants for the purposes of defensive threat assessment, testing of detection equipment and decontamination procedures/equipment • As a basis for consideration Germany has prepared a provisional form that requests information on every such release, including: the location and approximate area affected; type of microorganism, virus or simulant released; and purpose of release (threat assessment, etc.)
France and Finland BWC/CONF.III/17 24 September 1991	• Add form that requests information on military vaccination programmes • Form would request lists of vaccines (agent/disease vaccinated against) used in 'standard and/or regular peacetime vaccination programmes concerning active-duty military personnel, including conscripts, but excluding *ad hoc*, short-notice vaccinations for military personnel on special assignment (such as United Nations peace-keeping duties)'
South Africa BWC/CONF.V/COW/WP.1 16 November 2001	• Add form that requests information on plant inoculant and biocontrol agent production facilities • As a basis for consideration, South Africa has prepared a provisional 'Form H' that requests information on name of facility; location (mailing address); and general description of products produced
RGBAC, Isla, Occasional Paper No.3, March 2007	• Add form that requests information on facilities undertaking activities involving the aerosolization of biological materials • Proposed title: 'Exchange of information on biological aerosol facilities' • As a basis for consideration, the RGBAC has prepared a complete set of revised CBM Forms, including a provisional 'Form H'
Pugwash Study Group, Hart, Discussion Paper, November 2008	• Maintain and strengthen the relevance of CBM formats to clarify possible threats posed by non-state actors • Revise CBM formats to better reflect scientific and technological developments to achieve a better understanding of the verification or compliance implications of industry and scientific research activities

Table 10: Proposed addition of new forms ('Form H')

2. Improve the usability of the CBM forms

There have been a number of suggestions to streamline the CBM forms and make them more intuitive or user-friendly. It is believed that such measures would make data entry easier and faster, thus helping States Parties complete their submissions and fulfill their CBM obligations.

Proposals to improve the usability of CBM forms typically suggest redesigning their format, introducing more tables, tick-boxes, arrows and multiple-choice questions. Such measures, and similar simple modifications to the structure and layout of the forms, would allow collators to more easily navigate the forms and help standardize the reporting process. Other proposals suggest introducing guidelines and addressing the question of translation to facilitate completion by countries currently struggling to make submissions. Table 11 outlines these proposals.

Proposed by	Proposed modifications
SIPRI Chemical and Biological Warfare Studies No.10, ed. Geissler, 1990	• Request that the DDA translate CBM submissions into English
The Royal Society, Scientific Aspects of Control of BW, July 1994	• Design simplified CBM forms, requesting only essential information (e.g. under CBM A names of agents and work on delivery systems in defence programmes)
Canada BWC/CONF.VI/PC/INF.1 10 April 2006	• Develop user-friendly CBM forms, making greater use of tick-boxes rather than requiring written entries, helping to overcome language barriers
Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru and Uruguay BWC/CONF.VI/WP.12 20 October 2006	• Review existing measures and their format • Develop guidelines for enhancement of their implementation • Examine the desirability of creating new forms with a more readable format, independent of the language in which the forms are presented
France on behalf of the European Union BWC/CONF.VI/WP.4 20 October 2006	• Expand use of multiple-choice questionnaires
Switzerland in consultation with JACKSNNZ BWC/CONF.VI/WP.14 15 November 2006	• Streamline forms, clarifying what information is required and where, and introducing simple measures such as arrows and tick-boxes to make it easier and faster to navigate forms
South Africa BWC/CONF.VI/WP.21 20 November 2006	• Develop new, user-friendly, CBM formats • Address issue of translation to ensure wider availability in all languages
Switzerland BWC/CONF.VI/WP.37 8 December 2006	• Make CBM forms user-friendly and minimise ambiguities • As a basis for consideration, Switzerland has prepared a complete set of revised CBM forms
RGBAC, Isla, Occasional Paper No.3, March 2007	• Introduce more tick-boxes, making answers more easily interpreted and minimising the need for translation, or provide a short translation guide to language used in tables, making interpretation clearer • Request that the UN translate submissions, or encourage States to submit their CBMs in more than one UN language or to make their national translations of other States' CBMs available

Table 11: Proposals to improve usability of CBM forms

3. Modernise the reporting process

Building on proposals to improve the usability of the CBM forms, a number of proposals have been made to modernise the reporting process, encouraging the development and use of a comprehensive web-based information management system. It is believed that this measure would make data entry easier; standardise submissions; accelerate the circulation of information; make CBMs more widely accessible; and ultimately increase the quality and quantity of information provided by States Parties. Although the ISU has made considerable strides in this area (e.g. through the creation of a website dedicated to CBMs), further measures to integrate the use of computer-based online resources would improve the functioning of the CBM mechanism. The proposals outlined in Table 12 touch on some of the measures the ISU has already developed and introduces others that seek to further modernise the CBM process.

Proposed by	Proposed modifications
SIPRI Chemical and Biological Warfare Studies No.12, ed. Lundin, 1991	• Encourage States Parties to agree on measures to make the information exchange system more efficient
Hungary BWC/CONF.III/17 24 September 1991	• Change structure of reporting system in order to make it easily adaptable to computerised data processing, providing for such processing and granting access to its results for each State Party
Canada BWC/CONF.VI/PC/INF.1 10 April 2006	• Distribute CBMs electronically through a CD-ROM or on a secure website
Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru and Uruguay BWC/CONF.VI/WP.12 20 October 2006	• Make CBM forms available in electronic format
France on behalf of the European Union BWC/CONF.VI/WP.4 20 October 2006	• Introduce computerised CBM forms (with or without multiple choice questionnaires) that would allow for faster and easier circulation of declarations
Switzerland in consultation with JACKSNNZ BWC/CONF.VI/WP.14 15 November 2006	• Make CBM forms more accessible, working towards an electronic, web-based, information management system • Adopt an electronic CBM tool for data submissions similar to Chemical Weapons Convention (CWC)
Hunger and Isla, Disarmament Forum No.3, 2006	• Provide choice over submitting and receiving CBMs electronically or on paper • Develop electronic database to help ease access to completed CBMs • Encourage States to make their CBMs freely available online
RGBAC, Isla, Occasional Paper No.3, March 2007	• Provide the opportunity to receive CBMs electronically • Send CBM forms directly to designated contact point • Distribute CBMs through an open or protected website
Lentzos, Preparing the Ground for the CBM Content Debate, Swiss-Funded Study, December 2008	• Develop electronic submission forms and a user-friendly, web-based, information management system • Adopt electronic tick-boxes and pull-down menus to simplify data entry and to improve the visibility of key data • Adopt help functions and indicators to signal where to go next or where data still needs to be filled in

Table 12: Proposals to modernise the reporting process

4. Improve national data collection processes

The CBM data collection process can be difficult and time-consuming, particularly for States Parties preparing CBM submissions for the first time.

Moreover, there are significant differences between States Parties in their ability to obtain the required information due to disparities in resources, legal powers and language requirements, putting some countries at an even greater disadvantage and contributing to chronically low levels of CBM participation and incomplete and/or inaccurate CBM submissions.

In an effort to address these deficiencies, there have been a number of proposals to improve national data collection processes. Table 13 outlines these proposals, including calls to provide data collection guides; previously filled out CBM forms; and regional workshops on data collection and collation techniques.

Proposed by	Proposed modifications
Canada Department of Foreign Affairs and International Trade, CBMs: A Guide to Their Completion, CD-ROM	• Canada has prepared a detailed guide on CBMs, offering advice on how to compile data and making submissions available to States Parties for downloading • With this guide, Canada also includes their 2003 CBM submission, which can serve as a template for other States Parties to follow
SIPRI Chemical and Biological Warfare Studies No.10, ed. Geissler, 1990	• Encourage States Parties to establish national bodies and procedures to perform CBM duties
Switzerland in consultation with JACKSNNZ BWC/CONF.VI/WP.14 15 November 2006	• Improve national implementation to ensure comprehensive, regular and timely submissions
Canada BWC/CONF.VI/PC/INF.1 10 April 2006	• Encourage States Parties to submit CBMs on an annual basis, completed accurately and in a timely manner • Promote action on national implementation and encourage, in particular, the development of specific goals, time lines and methodologies to facilitate effective implementation • Encourage States Parties to report on their progress in passing national implementation legislation on a regular basis, such as at annual meetings • Encourage those in States Parties that are in a position to do so to provide implementation support to other States Parties
Hunger and Isla, HCBAC, Disarmament Forum No.3, 2006	• Provide technical assistance to States that struggle with collecting declarable data, completing and submitting CBMs • Develop international and regional workshops on CBM reporting or an e-mail helpline • Focus efforts on 'particularly important States': depositary States; countries that have had bioweapons programmes; countries that have been officially accused of biological efforts; and global and regional leaders in biotechnology
RGBAC, Isla, Occasional Paper No.3, March 2007	• Make CBM compilation assistance part of national or international efforts to strengthen the BWC • Encourage less experienced countries to monitor and follow the practices of more experienced countries • Promote international workshops that outline improved methods for data collection and collation • Introduce telephone or email hotlines to offer collection and collation assistance

	• Develop a task group that could tutor data compilation in countries requesting assistance
Lentzos and Woodward, National Data Collection Processes for CBM Submissions, Swiss-Funded Study, December 2007	• Encourage collators to help other collators, both those in States starting the process for the first time and those in States which have been submitting returns for some time but who may have specific questions on ways to improve data collection
Switzerland BWC/MSP/2007/WP.11 7 January 2008; BWC/MSP/2008/MX/WP.5 30 July 2008	• Promote improved collator rotation through use of up-to-date handover notes and close working relationships between predecessors/successors and technical experts • Develop guides on how to complete forms; provide copies of previously filled out forms; translate forms into the national language to avoid language problems; visit premises in person; hold seminars on a regular or one-off basis, etc.

Table 13: Proposals to improve national data collection processes

5. Make administrative improvements

Since the inauguration of the CBM mechanism, there has been a number of proposals to establish an administrative task force to facilitate the CBM information exchange.

Some of these proposals have now been realized in the Implementation Support Unit (ISU), which was officially launched on 20 August 2007. The ISU is mandated to assist States Parties in the following ways: (a) receive and distribute CBMs; (b) send information notices regarding annual submissions; (c) compile and distribute data on CBMs and CBM participation; (d) develop and maintain a secure website on CBMs; (e) serve as an information exchange point for assistance related to the preparation of CBMs; and (f) facilitate activities to promote participation in the CBM process.

Table 14 outlines proposals that led to or further encourage the work of the ISU. Although elements of these proposals have now been satisfied, taken together they suggest a strong interest in a more permanent CBM administrative task force.

Proposed by	Proposed modifications
Yugoslavia BWC/CONF.III/17 24 September 1991	• Establish a unit of the UN secretariat that would follow-up on the fulfillment of States Parties' CBM obligations
The Royal Society, Scientific Aspects of Control of Biological Weapons, July 1994	• Establish an administrative office that would issue reminders and follow-up on non-participating State Parties; correlate information in relation to laying a basis for verification; receive and collate intelligence information if it became available; monitor open-source publications (CBM C); receive and analyse information on exchange visits between staff of appropriate institutes (CBM D); advise countries on filling in CBM forms; and circulate CBM submissions
Hunger, Key Points for Fourth Review Conference September 1996	• Request that the DDA perform all activities related to CBMs, including: collection, distribution and analysis
SIPRI Chemical and Biological Warfare Studies No.19, ed. Sims, 2001	• Create incentive for States Parties to submit annual declarations by offering an annual review of CBM returns and additional compliance reports that is only open to CBM-participating States • States that do not make the 15 April deadline forfeit the opportunity to evaluate the quality and quantity of other States' data
Findlay and Woodward, Weapons of Mass Destruction Commission No.23, October 2004	• Establish a CBM Unit to enhance support for CBM process
Canada BWC/CONF.VI/PC/INF.1 10 April 2006	• Establish BWC secretariat or implementation support unit to carry out specific activities, including providing enhanced support for CBMs in the form of reminders; assistance; and annual summaries
France on behalf of the European Union BWC/CONF.VI/WP.4 20 October 2006	• Request that the DDA send out pre and post 15 April reminders • Invite States Parties to designate a contact point to which reminders can be sent • Request that the UN Secretary-General (UNSG) send out January reminders

Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru and Uruguay BWC/CONF.VI/WP.12 20 October 2006	• Establish a panel of governmental experts to assist in CBM duties • Provide assistance when requested in devising, presenting and implementing CBMs
Switzerland in consultation with JACKSNNZ BWC/CONF.VI/WP.14 15 November 2006	• Define stronger role for the DDA, allowing it to: raise awareness of States Parties and promote and explain the CBM system, jointly with States in a position to assist other States Parties; issue annual reminders to submit forms; act as intermediary between States requesting assistance and those offering assistance; verify plausibility of information submitted, clarify ambiguities and request missing pages; and provide basic statistics on CBM participation
RGBAC, Isla, Occasional Paper No.3, March 2007	• Create a permanent BWC task force, which will address all matters related to the Convention, including CBMs and CBM reform: provide a stronger collection mandate for the DDA, allowing it to issue CBM reminders and make inquiries and allow the DDA to conduct low-level (e.g. an annual participation summary), mid-level (e.g. a summary of the declared data reducing the large amount of information into several pages, which can be easily reviewed) and high-level (e.g. verification of information declared in CBMs) analysis of CBMs
Pugwash Study Group, Littlewood, Background Paper, November 2008	• Consider practical enhancements to the ISU in terms of staffing, mandate and outreach activities

Table 14: Proposals to improve CBM administration

6. Promote cooperation between States Parties

In keeping with the aims of the CBMs, and the implementation of the BWC, increased cooperation between States Parties stands to bring countries closer together; harmonize efforts to promote the peaceful and productive use of biology; increase transparency and build trust.

Given the fundamental importance of cooperation, a number of proposals have been made to promote and improve contact between States Parties. These proposals are generally concerned with raising awareness of the CBM mechanism through bilateral and multilateral dialogue; regional forums; and other cooperative efforts that seek to promote the exchange of information, researchers, and best practices. Table 15 outlines these proposals in more detail.

Proposed by	Proposed modifications
SIPRI Chemical and Biological Warfare Studies No.12, ed. Lundin, 1991	• Take actions to enhance exchange of scientists on a long-term basis, especially between facilities involved in research directly related to the BWC
Hungary BWC/CONF.III/17 24 September 1991	• Encourage States Parties, which are ready to do so, to open their declared facilities on a reciprocal basis to verify on-site the information provided in their CBMs
BWC/AD HOC GROUP/WP.85, 26 July 1996	• Promote the exchange of information between States Parties (BWC as "hub"): establish electronic networking on issues relating to materials and activities of potential relevance to the BWC; video conference connectivity/network to support information sharing; and 'virtual' attendance at scientific conferences
BWC/AD HOC GROUP/WP.86, 26 July 1996	• Promote voluntary confidence-building visits to demonstrate transparency in matters related to the BWC and to foster the mutually beneficial exchange of information and technology between participating States Parties
BWC/AD HOC GROUP/WP.87, 26 July 1996	• Encourage bilateral and/or multilateral visits of experts to comparable facilities between States Parties on a voluntary and/or reciprocal basis and bilateral/multilateral scientific exchanges where common interest exists between countries, covering all areas directly related to the BWC
France BWC/MSP/2004/MX/WP.55 28 July 2004	• Promote and improve international laboratory networks and cooperation
France on behalf of the European Union BWC/CONF.VI/WP.4 20 October 2006	• Encourage States Parties that are in a position to do so to support other States Parties that request assistance in returning their CBM forms
Switzerland in consultation with JACKSNNZ BWC/CONF.VI/WP.14 15 November 2006	• Raise awareness of States Parties and promote and explain the CBM system, jointly with States in a position to assist other States Parties
RGBAC, Isla, Occasional Paper No.3, March 2007	• Raise awareness with regard to the importance of CBM participation through regional promotional workshops and other appropriate events • Promote voluntary multilateral on-site validation visits • Encourage States Parties who wish to establish a precedent for cooperation and transparency to offer and attend visits of this kind
VERTIC, Research Report No.6, October 2006	• Take action to implement the BWC through regional forums initiated by States Parties

Littlewood, Canadian Centre for Treaty Compliance (CCTC), 2008	• Encourage States Parties to provide assistance to other States Parties that are experiencing legitimate difficulties submitting annual CBM forms
Pugwash Study Group, Hart, Discussion Paper, November 2008	• Consider incorporating select consultation, clarification and fact-finding measures into the CBM structure (e.g. by agreeing to a political statement supporting a process of clarification among interested parties at the margins using such measures)

Table 15: Proposals to promote cooperation between States Parties

7. Invite civil society groups and international organisations to play a role in the CBM process

There have been a number of proposals to invite civil society groups and international organisations to play a role in the CBM process. Civil society groups are said to have the potential to contribute significantly to the oversight and development of the CBMs, as such groups are free to set their own agenda and could propose novel ideas towards the betterment of the CBM process. International organisations, such as the WHO, are said to have the potential to interface with the BWC, drawing on a wealth of epidemiological data and expert insight that could either substitute certain CBM measures or simply support CBM duties. Table 16 outlines a number of proposals that seek to incorporate the energy and expertise of each of these groups, enhancing the effectiveness of CBMs.

Proposed by	Proposed modifications
SIPRI Chemical and Biological Warfare Studies No.10, ed. Geissler, 1990	• Encourage international organisations and non-governmental organisations (NGOs) to participate in the CBM information exchange and announce forthcoming meetings, exchanges of scientists, etc. • Encourage scientists, universities and scientific societies to declare that they will not participate in offensive biological weapons programmes • Request that the WHO collect, evaluate and distribute data submitted by States Parties on containment labs and disease outbreaks
SIPRI Chemical and Biological Warfare Studies No.12, ed. Lundin, 1991	• Request that information on facilities, outbreaks, conferences, publications, and exchange programmes be fed into a central database with the WHO, or a similar agency, which could be accessed by States Parties at any time instead of requesting information in voluminous and lengthy reports
BWC/AD HOC GROUP/WP.85, 26 July 1996	• Promote the exchange of information between States Parties and international organizations (BWC as “hub”): monitor databases that track unusual disease outbreaks in humans (e.g. WHO Weekly Epidemiological Record); animals (e.g. OIE Disease Information); and plants (e.g. joint FAO/OIE/WHO questionnaire)
VERTIC, Research Report No.6, October 2006	• Liaise with other intergovernmental organisations
Hunger and Isla, HCBAC, Disarmament Forum No.3, 2006	• Make electronic CBM database available to non-governmental experts to increase possibilities for CBM analysis and assessment
Pugwash Study Group, Jefferson, Report, December 2007	• Build synergy with other international organisations • Increase inclusiveness of academic and research institutions and NGOs • Improve transparency through open dialogue with industry
Canadian Centre for Treaty Compliance, Littlewood, Compliance Chronicles No.6, July 2008	• Grant civil society groups (including NGOs, professional scientific bodies, industry and other non-state actors) greater access to CBM information • Work with these groups to address problems with the CBM mechanism and consider possible solutions
Pugwash Study Group, Littlewood, Background Paper, November 2008	• Encourage civil society groups to start a collaborative website (e.g. a ‘Wiki’) that would permit them to think about and test various ideas, policy proposals and possible solutions that would help prepare the ground for a successful conference in 2011

Table 16: Proposals to invite civil society groups and international organisations to play a role in the CBM process

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Appendix C: Common Ground on Technical Revisions to the CBMs Based on Discussions at the 2009-2010 Series of Workshops

The following suggested revisions to the CBMs reflect a best judgment of the common ground among participants at the series of workshops. It should be recognized that not all participants endorsed all of the suggestions made.

CBM Forms:

Form A, part 1
- Retain this form.
- Declarations under this form should cover facilities that fulfill the requirements set out for maximum containment (BSL4) for handling human and/or animal pathogens classified as Risk Group 4 microorganims. To ensure the inclusion of all BSL4 centres and facilities, it should be clarified on the form that it is not limited to research activities.
- Item #6 of the existing form should be deleted because some States Parties misunderstand this item, believing that they should declare BSL3 and/or BSL2 facilities in the absence of BSL4 facilities.
- Add a new item requesting a list of publications (this addition allows Form C to be deleted).
- The footnote that defines the maximum containment requirement should be revised to refer to the latest version of the WHO Laboratory Biosafety Manual and should also include a reference standard for veterinary facilities, i.e. the relevant chapter from the OIE Terrestrial Manual.

Form A, part 2 (i), (ii) and (iii)
- Retain this form.
- The declarations under Form A, part 2 should cover "any research and development programme aimed at the protection of humans, animals or plants against the hostile use of biological agents and toxins," i.e. all state and state-funded military and civil biodefence programmes.

Form A, part 2 (i)
- Retain this form without change (except for the clarification mentioned immediately above).

Form A, part 2 (ii)
- Retain this form.
- A question should be added on whether procedures and/or practices are in place to internally review national compliance with the Convention, i.e. a question on so-called "oversight procedures" for declared biological defence programmes.

Form A, part 2 (iii)
- Retain this form.

- Item #5 should be modified to clarify that “indoor” aerosol work is also to be included in the description of the biological defence work carried out at the facility.

Form B (i)
- Delete this form altogether.

Form B (ii)
- Retain this form.
- Enable provision of links to national websites and WHO, OIE and PROMED websites where reports are published on disease outbreaks that seem to deviate from the normal pattern and that are considered particularly important to the Convention.
- Questions relating to assistance and cooperation could be added as follows:
  - assistance requested: yes / no
  - assistance received: yes / no

Form C
- Delete this form altogether.
- Move publication list to Form A part (i).

Form D
- Retain and revamp this form.
- This declaration form should:
  - promote active contacts for cooperation;
  - report forward-looking events/activities that offer opportunities for Article X-related cooperation;
  - provide a platform for requesting and offering assistance.

Form E
- Retain and revamp this form.
- Questions with yes/no answers should be added covering oversight measures, including but not limited to legislation, that capture activities identified during the intersessional process as having the potential to improve the implementation of obligations under the BWC, e.g.
  - biosafety
  - biosecurity
  - disease surveillance
  - codes of conduct addressing the “dual use problem”
- Web links should be added to databases like the ISU Implementation Database, the 1540 Legislative Database or others where lists of oversight measures are available.
- Add a question on the BWC national authority/ point of contact.

Form F
- Retain this form without change.

Form G
- Retain this form.

- Form G should be expanded to include the declaration of facilities that produce vaccines licensed by a State Party for the protection of animals.
- Split form into: G (i) requesting the declaration of facilities that produce vaccines licensed by a State Party for the protection of humans; and G (ii) requesting the declaration of facilities that produce vaccines licensed by a State Party for the protection of animals.

New Form
- Given the proposed deletion of item #6 in Form A, part 1, a new form should be added for States that do not possess a BSL4 facility.
- The new form should ask for the highest biosafety level implemented in facilities on a State Party's territory handling biological agents and toxins (with a footnote referring to the WHO and OIE standards):
  - biosafety level 2 (BSL2): yes / no
  - biosafety level 3 (BSL3): yes / no

Form 0
- If nothing new to declare, the form should include a reference to the last year in which information was provided for a particular form.
- The date of entry into force of the Convention for the State Party should be moved from Form F to Form 0.

Modalities of submission

Based on the three modes of electronic CBM submission presented at the final workshop, the WEB 2.0 approach offers the best opportunity for information to be provided in both a static (fixed deadline) and a dynamic (updating) manner. However, the opportunity to make an electronic submission should not rule out the possibility of providing declarations in paper form. To allow the ISU to compile databases on: national implementation, assistance requested/offered, other activities declared under Form E, vaccine production, etc. a decision will need to be made as to what CBM information should be openly accessible and what CBM information should be held in a secure area of the ISU website. While open accessibility versus restriction of information may influence how the revised forms will be designed, a final decision on the mode of electronic submission is not required before the content of the updated forms is agreed.

Assembling the CBM package
- The CBM review process may also consider re-grouping the CBM forms in a logical way that covers three areas:
  - implementation of the BWC,
  - capacities and capabilities of a State Party, and
  - cooperation and assistance.
- Clear and simple forms could contribute to making the CBMs a useful channel for requesting/offering assistance in the BWC context.

Appendix D: Workshop Series Participant List

Representatives participated from the following governments, intergovernmental organisations, civil society and academic institutions:

Algeria
Argentina
Australia
Canada
Carleton University
Chile
Darmstadt University
Denmark
France
Geneva Forum
Germany
Hamburg University
India
Iran
Italy
Japan
London School of Economics
Mexico
Norway
Pakistan
Quaker United Nations Office (Geneva)
Russian Federation
South Africa
Sweden
Switzerland
Texas University
United Nations Institute for Disarmament Research
United Kingdom
United States of America
United Nations Office for Disarmament Affairs
Vertic