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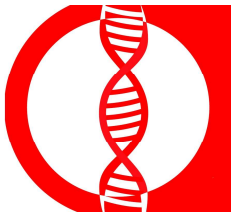

Strengthening the BWC's Confidence Building Measure Regime: A Catalogue of Recommendations

Nicolas Isla

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The aim of the Research Group for Biological Arms Control at Hamburg University is to contribute, through innovative research and outreach activities, to the universal prevention of biological weapon development, production and use. The development of new strategies, concepts and methods for verification and ensuring compliance is its core research area.

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Executive summary

The lack of a mechanism for verifying State Party compliance to the Biological Weapons Convention (BWC) has highlighted the need for an effective transparency enhancing measure. The confidence building measures (CBM) were designed for building trust between Member States by increasing transparency in treaty relevant activities. Transparency is important in a regime because it can dispel concerns of other actor's non compliance and can also serve as a deterrent to countries engaging or planning to engage in banned activities. This was the role the CBMs were intended to play when they were first implemented in the BWC in 1987 and later revised in 1991. Since 1991, the contents of the CBMs have not been modified.

There is, however, an ever-pressing need to revisit the CBM forms. After the efforts to implement a verification tool ended unsuccessfully in 2001, CBMs were once again the only opportunity to exchange data under the Convention. Nevertheless, participation rates and the efforts states put into their compilation remained low. As of 2005, only 93 countries – 60% of BWC Members States – have submitted one or more times. Furthermore, the quality of the submitted CBMs reflects a low degree of importance assigned to their compilation and is illustrated by an analysis of the CBMs from 2005.

This paper first serves as a resource guide to the evolution of the CBMs within the BWC, covering past, state and non-state actor proposals for improvement. It then proposes a number of changes for State Parties to discuss during future attempts to strengthen the CBM regime, and presents an entirely new format for the CBM forms. The Sixth Review Conference of the BWC, which took place at the end of 2006, was a timely occasion to propose improvements although few of these recommendations were translated into action. It is our opinion that CBMs will play a vital role in taking steps towards a more comprehensive and stronger treaty. The CBM regime must be seen as the starting point for a more effective transparency instrument.

The recommendations proposed in this paper are organized as a catalogue. It breaks down and itemizes every aspect of the CBM mechanism and examines options to improve it. This refers not only to the content of the CBM forms but also to the compilation, collection, processing, distribution and use. All aspects of the CBMs are inextricably linked and must be improved together for there to be any positive effect. Likewise, it is not possible to improve participation independently of quality, or vice versa. Rather both will improve in unison as State Parties gain greater confidence in the CBM mechanism. It is clear, however, that the best way to strengthen the CBMs is to make their compilation as simple as possible without losing quality. Nevertheless, only universal participation will allow the CBMs to fulfil their mandate of building confidence between State Parties and as such, must be the goal for any CBM improvement.

Thus, the catalogue begins by examining the topics of the present CBMs. It evaluates the seven forms in terms of their relevance to building confidence in the compliance of actors to the BWC. Topics are added in order to fill gaps in requested information. Others are deleted. In parallel the catalogue looks at the CBM format. Parts of the CBM forms are made simpler and ambiguity is eliminated. Secondly, the catalogue looks at process reform on an international and national level. The paper examines ways to improve collection, processing and distribution on the part of the United Nations Department for Disarmament Affairs (DDA). The role of the DDA would be made more efficient with a larger mandate for each one of these steps. On the national level, bilateral and

multilateral assistance would improve participation, as would awareness-raising and emphasizing the importance of CBM participation.

Finally, this paper presents the discussions and decisions regarding the CBMs which took place at the Sixth BWC Review Conference in November 2006. Ultimately, little progress to strengthen the CBM regime was made despite there being a number of proposals from State Parties. The recommendations presented in this report, therefore, remain relevant for the coming intersessional process and should carry a caveat that reform is still necessary.

Author's note

This paper was distributed in two forms. The criticality of the Sixth Review Conference in determining the future of biological arms control was too important to not attempt to make some positive contribution to the CBM regime. As such, a draft version was prepared and distributed to participants. The draft version included recommendations which were directly aimed at policy decisions that we thought should be made at the Review Conference. In this final version of the *Catalogue of Recommendations*, we have chosen to keep these recommendations so that the reader can see exactly where progress was made at the Sixth Review Conference and where, as in most places, it was not. For issues on which the State Parties made a decision, the results are presented alongside the recommendations for improvement. Section 3.5, pp 38 presents more detailed information on the results of the Sixth Review Conference. Most recommendations, however, will remain valid for the coming years, or until State Parties are willing to take genuine steps towards a stronger BWC.

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1 Introduction

The primary purpose of confidence building measures (CBM) as part of any international regime, more than to provide a picture perfect description of all activities being undertaken in each country, is to attempt to build trustful relations through transparency and install a sense of camaraderie in tackling an issue which all actors face together. In a climate where the principles established by an international regime can be disregarded by self-interested actors seeking to gain an advantage, building a foundation of confidence is paramount to a continuing mutually beneficial collaboration. This is particularly true of security regimes.

CBMs can have a number of effects on the dynamics of a regime including the ability to assess the compliance and importance assigned by the actor to the given regime, to reduce uncertainty and increase transparency in actions undertaken by an actor, to increase confidence in the regime itself as a tool for bringing countries into line with global norms, and to establish trusting relations between states on a bilateral or multilateral level allowing for greater collaboration in and outside of the regime.[1]

CBMs were first adopted under this name in 1975 by the Helsinki Conference on Security and Cooperation in Europe (CSCE). They consisted primarily of notifications concerning troop movements in Europe and the exchange of observers and sought to eliminate tensions between adversaries.[2] Subsequent adoptions of CBMs in other regimes have been based on largely the same theoretical background. Transparency-building CBMs, in the form of national reporting duties, have been integrated into a number of arms control treaties, including, the Non-Proliferation Treaty as part of the IAEA's nuclear safeguards, the Chemical Weapons Convention, the Mine Ban Treaty for anti-personnel mines, and UNSC Resolution 1540 for preventing sub-state actors from gaining access to weapons of mass destruction.

The need for confidence building in the area of biological arms control is extremely pressing for several reasons. Firstly, there are two documented cases of national breaches to the Biological Weapons Convention (BWC), by the Soviet Union and Apartheid South Africa,[3] and other allegations of past breaches surface periodically. A past violation by one of the depositories has deepened the rift in a regime where trust and the will to collaborate are not widespread. Secondly, the BWC lacks what is necessary to building an effective arms prohibition treaty: a method of verifying compliance to the established norms.

In the last few years attempts to strengthen the Convention have taken steps backwards. Efforts to implement a verification tool ended unsuccessfully in 2001 leaving the Convention in an awkward state of paralysis. The process which ensued included successive annual discussion on three topics, which served at worst to initiate discussion among Member States and at best to take steps forward in strengthening the BWC. There is still a great deal of confidence building left to be done.

However, CBMs are not a substitute for legally binding declarations. One Western European and Other Group (WEOG) representative described his country's approach to CBMs as follows: "CBMs

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[1] Chevrier M, Hunger I (2000) Confidence-Building Measures for the BTWC: Performance and Potential. Nonproliferation Review, Fall-Winter, pp. 24-42.

[2] Conference on Security and Cooperation in Europe Final Act, Helsinki 1975, pp. 10.

[3] Iraq, although a signatory, did not ratify the BWC until 1991, and therefore was technically not in breach of the Convention.

are taken for what they are: a voluntary submission and they are therefore taken in good faith. There is obviously no guarantee but since they are not obligatory, they are important only as acts of compliance." This approach points out the strengths and the weaknesses of the CBM regime. Indeed, any submissions should be considered a demonstration of support for the norms of the BWC, however, for there to be real confidence building between nations, the CBMs have to be accurate and complete, and they must address issues which directly impact the ability to develope biological weapons.

For reasons that will be explained in greater detail further on, CBMs have not fulfilled the role they were designed for and for this reason, should be reviewed. This paper first serves as a resource guide to the evolution of the CBMs within the BWC, covering past proposals for their improvement. It then recommends a number of improvements for State Parties to discuss during attempts to strengthen the CBM regime. With the Sixth Review Conference in November 2006 having made little progress in this area, improvement to the CBM regime requires concerted advocacy from State Parties who believe in their importance. It is our opinion, and of many others as well, that CBMs, as the only form of data exchange under the Convention, will play a vital role in taking steps towards a more comprehensive and stronger treaty. The CBM regime must be seen as the starting point for a more effective transparency-enhancing instrument.

1.1 Role of CBMs in building transparency in the biological field

The CBMs fulfil the role of building trust between Member States by increasing transparency in relevant activities. Transparency in a regime can dispel concerns of other actor's non-compliance and can also serve as a deterrent to countries engaging or planning to engage in banned activities.

In biological arms control, transparency must play a large role because of the dual-use nature of modern biotechnology. An increasing portion of contemporary biotechnologies can have both a peaceful, industrial, medical or defensive, application or a hostile military application. Preventing modern biotechnologies being used for offensive military purposes must be achieved without negatively impacting legitimate scientific development, the transfer of technology, and economic prosperity. Transparency also allows one to see where illicit activity is occurring or is more likely to occur. For example transparency in high misuse potential activities such as those conducted as part of biodefence programmes, would serve to reassure the international community of the legitimate intentions of the activities. Former United Nations Secretary General, Kofi Annan, pressed this issue to the General Assembly in 2005, stressing the need to open the doors of biodefence facilities.[4]

Absolute transparency is virtually impossible because there will always be holes, intentional or not, in the access to information. However, an actor's compliance and support for establishing a trusting atmosphere can be assessed according to how actively it engages in transparency-enhancing activities.

1.2 History of CBMs

Between 1969 and 1971 negotiations on the BWC produced a treaty with no significant verification measure for monitoring the compliance of State Parties. The UK working document, from which the Convention was drafted, was stripped of any such instrument by what many describe as bilateral negotiations between the USA and the Soviet Union. Critical voices were present, perhaps most

[4] A/59/2005 United Nations General Assembly: In larger freedom: towards development, security and human rights for all. Report of the Secretary-General. 21 March 2005, http://daccessdds.un.org/doc/UNDOC/GEN/N05/270/8/PDF/N0527078.pdf?OpenElement.

vociferously through France and Sweden, yet the only recourse to the lack of a verification instrument was through the agreed Review Conferences to be held in intervals of 5 years.

The First Review Conference in 1980 produced little in terms of strengthening the Convention. Article V was expanded to allow for any Member State to call for a consultative meeting at the expert level to clarify "any problems which may arise in relation to the objective, or the application of the provisions of, the Convention."[5] And investigative powers in the form of challenge inspections were assigned to the Security Council under Article VI. However, this was still a far cry from an efficient non-compliance monitoring system, as the Security Council allowed an inspection to be vetoed by any of the five permanent members. Proponents of a strong Convention supported the inspection authority in the office of the Secretary General.[6]

At the Second Review Conference in 1986, State Parties agreed to define the scope of the consultative meeting. The resulting agreement allowed any Member State to initiate a compliance discussion without denouncement to the Security Council. The Second Review Conference also took the decision to adopt Confidence Building Measures in order to strengthen Article V and X. The purpose of the CBMs was seen differently by two camps: Western states saw most benefit in providing specific detail related to relevant activities requested in the CBM. Non Aligned Movement (NAM) and Eastern European Group states felt that confidence-building, through providing information on areas of cooperation, would most benefit the BWC. The resulting CBMs took the middle road.[7] The details were agreed upon at an Ad Hoc Meeting of Scientific and Technical Experts in 1987, but it was decided at the Second Review Conference that the CBMs should include:

- Form A: The exchange of information on research facilities and laboratories undertaking research on biological material which poses a high risk to humans or is relevant to aspects of the Convention.
- Form B: The exchange of information on outbreaks of infectious or toxin biological material which deviates from normal patterns.
- Form C: Encouragement of publication of results of biological research directly related to the Convention.
- Form D: Active promotion of contacts between scientists engaged in biological research directly related to the Convention.

The purpose of the CBMs is described in the Second Review Conference final document as "to prevent or reduce the occurrence of ambiguities, doubts and suspicions" in the compliance of Member States to the Convention.[8] Each country is encouraged to submit the CBM declarations no later than the 15th of April of each year.

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[5] Final Declaration of the First Review Conference of the Biological Weapons Convention (1980) BWC/CONF.I/10 p. 3.

[6] An investigative mechanism initiated by the Secretary General could be carried out at the request of a Member State but only in suspected cases of the use of chemical or biological weapons.

[7] Littlewood J (2005) The Biological Weapons Convention: A Failed Revolution. Ashgate, Burlington, VT, USA.

[8] Final Declaration of the Second Review Conference of the Biological Weapons Convention (1986) BWC.CONF.II/13/II p. 7.

At the Third Review Conference in 1991, with the need to increase submission rates as well as "strengthen further the exchange of information", State Parties agreed on several modifications and additions to the CBM forms:

- Addition of Form 0: allowing a statement of "nothing to declare" or "nothing new to declare".
- Expanded Form A: to include greater detail on biodefence research and development facilities.
- Expanded Form B: to include background information on reportable disease outbreaks.
- Addition of Form E: declaration of legislation, regulation and other measures.
- Addition of Form F: declaration of past activities in offensive and/or defensive biological research and development programmes.
- Addition of Form G: declaration of human vaccine production facilities.

In addition to modifying the CBMs, State Parties expanded and clarified procedures for calling an expert consultative meeting on the implementation of the Convention. State Parties also agreed to establish the Ad Hoc Group of Governmental Experts, mandated to explore different avenues for verification under the BWC. This group was dubbed VEREX.[9]

Since the last expansion in 1991 no other modifications to the CBMs have been made. The current forms can be found in Annex III. At the Fourth Review Conference State Parties highlighted the continued importance of the data exchange regime, noting the uneven participation and recognising the technical difficulties which State Parties might face in implementation. The final document, nevertheless, stressed the importance of State Parties submitting full and timely declarations. CBMs were also discussed at the Fifth Review Conference in 2001, where propositions were made but never adopted because of the unsuccessful end and the failure to produce a final document. Nevertheless, most present assert that these modifications would have been adopted by all Member States had the conference ended differently.

1.3 Summary of CBMs from 2005

The following section will present a superficial summary of the most recent full submission available to the author. CBM submissions from 2005 were used in part as basis for assessing the current status of the CBM regime. As the latest submission they should contain the most accurate and up to date information. There is also a relatively high degree of participation.

While all State Parties to the BWC will have received a copy of the 2005 CBM compendium, it is another question entirely whether the CBMs have been at all examined. The purpose of presenting the 2005 data is to show readers the type of information which is available in the CBMs. Table 1 shows a summary of the 2005 CBM submissions.

[9] Final Declaration of the Third Review Conference of the Biological Weapons Convention (1991) BWC/CONF.III/23 p. 9.

Table 1. Summary of 2005 CBM submissions

Number of CBM submissions	50
Participating countries	Argentina, Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Canada, Chile, China, Cuba, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Grenada, Hungary, Ireland, Italy, Japan, Latvia, Libyan Arab Jamahiriya, Liechtenstein, Lithuania, Luxembourg, Malta, Morocco, Netherlands, New Zealand, Norway, Poland, Qatar, Republic of Korea, Russian Federation, Serbia and Montenegro, Slovak Republic, South Africa, Spain, Sweden, Switzerland, Turkey, Turkmenistan, Ukraine, United Kingdom and Northern Ireland, United States of America, Uzbekistan.
Number of CBMs in Addendum 1	5: Finland, Japan, Latvia, Morocco, Spain.
Number of first-time submissions in 2005	5: Grenada, Libya Arab Jamahiriya, Morocco, Serbia and Montenegro, Turkmenistan.
Languages	2 in Arabic, 1 in Chinese, 35 in English, 3 in French, 4 in Spanish, 5 in Russian.
Number of pages	With 0-9 pages 13 CBMs, with 10-29 pages 26 CBMs, with 30-49 pages 8 CBMs, with over 50 pages 3 CBMs.
Number of biodefence programmes	22 countries have biodefence programmes, 12 do not, 16 are not explicit about the biodefence programme in the 2005 CBMs.

Country	Biodef prgm [10]	Form A1 [11]	Form A2(iii) [12]	Form G [13]	Country	Biodef prgm (2005)	Form A1	Form A2(iii)	Form G
Argentina	No	30	0	11	Libyan Arab Jamahiriya	No	0	0	0
Australia	Yes	3	1	1	Liechtenstein	No	0	0	0
Austria	Yes	1	1	0	Lithuania	n/a	3	0	0
Belarus	Yes	1	0	0	Luxembourg	n/a	0	0	0
Belgium	Yes	0	2	0	Malta	n/a	0	0	0
Brazil	Yes	0	0	3	Morocco	No	0	0	1
Bulgaria	Yes	1	1	1	Netherlands	Yes	4	1	7
Canada	Yes	22	1	4	New Zealand	n/a	0	0	0
Chile	No	2	0	2	Norway	Yes	1	1	3
China	n/a	4	1	11	Poland	n/a	0	0	0
Cuba	n/a	1	0	2	Qatar	n/a	0	0	0
Czech Republic	Yes	4	3	2	Republic of Korea	No	2	0	8
Denmark	No	0	0	1	Russian Federation	Yes	14	3	16

[10] Indicates if the State Party, in the 2005 CBMs, was clear about the presence of a biodefence programme within the country. Yes, indicates the existence of a programme; No, indicates a programme does not exist; and n/a indicates the country did not clearly answer this question in the 2005 CBM, stating in some cases "nothing to declare" or "nothing new to declare" in Form 0.

[11] Number of maximum containment facilities and others conducting relevant work declared in Form A, part 1.

[12] Number of biodefence facilities declared in Form A, part 2 (iii).

[13] Number of vaccine production facilities declared in Form G.

Country	Biodef prgm [10]	Form A1[11]	Form A2(iii) [12]	Form G [13]	Country	Biodef prgm (2005)	Form A1	Form A2(iii)	Form G
Estonia	n/a	0	0	0	Serbia and Montenegro	No	0	0	1
Finland	Yes	5	0	0	Slovak Republic	n/a	1	0	0
France	Yes	0	2	0	South Africa	n/a	0	0	0
Georgia	No	0	1	0	Spain	Yes	4	3	12
Germany	Yes	3	4	3	Sweden	Yes	3	0	2
Greece	No	0	0	0	Switzerland	Yes	0	1	0
Grenada	n/a	0	0	0	Turkey	No	2	0	0
Hungary	n/a	8	0	1	Turkmenistan	No	0	0	0
Ireland	Yes	6	0	1	Ukraine	n/a	5	0	6
Italy	Yes	2	2	8	United Kingdom and N. Ireland	Yes	5	1	2
Japan	Yes	3	1	8	United States of America	Yes	8	32	9
Latvia	n/a	0	0	0	Uzbekistan	n/a	0	0	0

1.4 Why CBMs need reforms

The success of any regime is dependent on how well the instrument is designed and how well it is implemented. If it is not well designed compliance and participation within the system will reflect this. Likewise, an efficiently devised tool will promote strong compliance providing it has support from State Parties for implementation. Careful consideration for the design and for political circumstances in to which the regime is introduced is absolutely necessary. Furthermore, the instrument must also be able to stand the test of time, in that it must remain relevant through evolving political and technological conditions. The CBMs were designed in the 1980s at a time of increased political tensions between Eastern and Western blocs, and before the advances in biotechnology could allow the development of substantially more effective forms of biological weapons. The information which is requested clearly reflects issues of that particular constellation of concerns. If they are no longer relevant today than modification to the CBMs must be made.

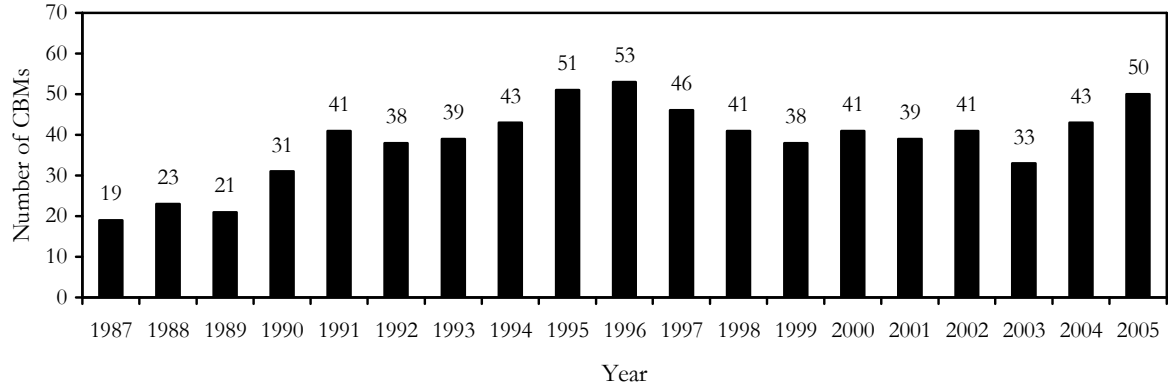
The basis for proposing the need to strengthen the CBM regime is the lack of participation over many years and the relative poorness in the quality of submissions.

1.4.1 Participation and geographical distribution

Since their adoption CBM submission rates have been poor. As of 2005, only 93 countries – 60% of BWC Member States – have submitted one or more times. The highest level of submission occurred in 1996 with 53 Member States submitting a CBM, however, this was followed by a downward trend to 33 submissions in 2003. Both of these years mark important trends in biological arms control: 1996, a high submission rate in anticipation of the Fourth Review Conference and a continued optimism over implementing a verification instrument. Between 1996 and 2001, the anticipation of the Verification Protocol, which would have been adopted in 2001, caused CBM submission rates to decline because among other things, the Protocol would have included mandatory initial and annual declarations on similar topics. A lull in CBM submission in 2003, exemplifies the lack of direction in

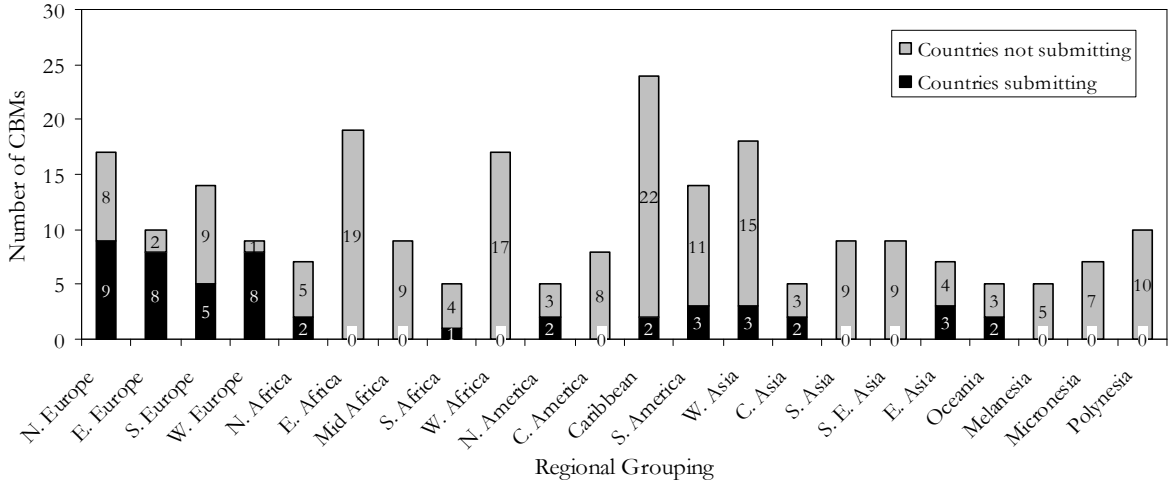
BWC discussions. In the last three years submission rates have increased again, most likely in anticipation of the Sixth Review Conference, which took place at the end of 2006, and, perhaps a common understanding that steps need to be taken to salvage the BWC. Table 2 below shows CBM submission rates for the years between 1987 and 2005.

Table 2. Number of CBM submissions per year until 2005[14]



Another issue which should be examined in more detail is the geographical distribution of CBM submissions. This would allow more targeted efforts to promote CBM submission in areas where participation is low. Table 3 shows CBM submission rates in UN designated regional groupings from 2005.

Table 3. 2005 CBM submissions by UN geographical regions

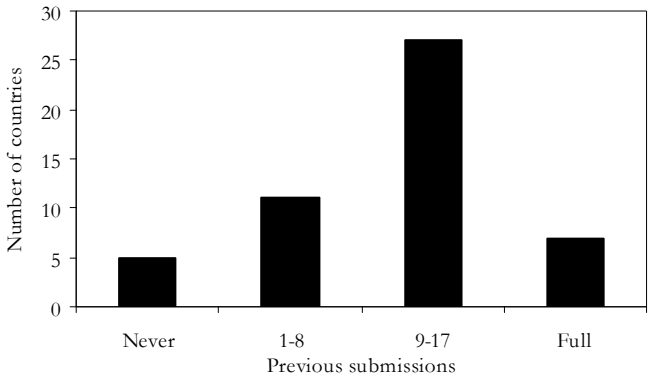


As can be seen from Table 3 there are a number of regions which have a very poor submission rate. In 2005, in the African continent three out of 57 countries submitted a CBM; in the Pacific group two out of 27; in the Americas seven out of 51; in Asia ten out of 48; and in Europe 30 out of 50 countries.

[14] The DDA secretariat of the BWC (Background Information Document on the History and Operation of the Confidence-Building Measures for the Sixth Review Conference of the Biological Weapons Convention (2006)BWC/CONF.VI/INF.3/Add.1) puts participation for 2006 at 54 countries although this cannot be independently verified by Hamburg Research Group researchers.

Furthermore, it is, to a large extent, the same countries submitting a CBM. Few first-time countries participate in any given year, particularly recently. Table 4 shows the number of previous declarations countries which participated in 2005 submitted.

Table 4. Number of previous declarations made by countries submitting a CBM in 2005



To summarize, CBM submission rates have been poor since their implementation, although they have improved in the last three years. The poor submission rate is largely a result of poor performances in particular regional groupings. Participation occurs generally on the part of countries with already high submission rates, exemplified by the fact that almost 70% of CBMs submitted in 2005 were submitted by countries which had submitted nine or more times in the last 19 years. As of 2006, in the last seven years only 12 first-time declarations have been made.

1.4.2 Quality

A CBM lacks in quality if it is incomplete, inaccurate, or compiled with obvious disregard for the quality of information provided. Completeness and accuracy are difficult to assess without a comparative study with information from other sources, and in particular areas, such as biodefence for which other sources of information are for the most part, unavailable. Nevertheless, some qualitative studies have been undertaken. One such is a study of Form F, on past offensive and defensive programmes.[15] This study has shown that even some countries which have long promoted the goals of the BWC are not as transparent as one would expect. Descriptions of past offensive programmes were found to be incomplete, inaccurate and at times misleading.

Disregard for the quality of information is seen more frequently. This lack in quality can be seen by simply reviewing the CBMs. In 2005 a number of examples of this kind were discovered:

- One country declared 30 facilities under Form A1, on maximum security and other relevant laboratories. This number is very high and it is likely that greater selectivity could be used in selecting relevant facilities to declare.
- Two countries failed to provide a Form 0, while at the same time did not provide declarations for all forms.

[15] Isla N (2006) Transparency in past offensive biological weapons programmes: An analysis of Confidence Building Measure Form F 1992-2003. Hamburg Centre for Biological Arms Control, Occasional Paper No. 1, June 2006.

- Several countries provided "nothing to declare" or "Nothing new to declare" answers yet provided a declaration. In this case, it is not clear whether this information supplants or complements previously declared information.
- Four countries ticked both the "nothing to declare" and "Nothing new to declare" boxes for several of the forms.
- One country declared not having a biodefence programme but declared a biodefence facility in Form A2 (iii).
- One country declared two biodefence facilities despite submitting a "nothing new to declare" answer for the last 6 years for Form A2 (i) in which it previously declared having no biodefence programme.
- One country declared in Form A2 (i) to have a biodefence programme, but does not declare any biodefence facilities. Ministry of Defence research facilities are declared in Form A1 only.
- One country declared all its biodefence facilities in both Form A1 and again in Form A2 (iii). For each facility a Form A2 (ii) is also provided. With so many additional forms, this CBM becomes confusing.
- One country did not submit funding information on biodefence programmes, a requirement of Form A2 (ii).
- One country, in Form B (i) on background information on disease outbreaks, declares diseases affecting only the armed forces.
- One country declares vaccine production facilities but does not name the organism against which the vaccines are produced.
- Although late is better than not at all, submitting the CBMs after the submission date demonstrates a lack of respect for the regime. Five countries submitted CBMs late in 2005 and are in the first addendum.[16] 105 countries did not submit a CBM at all.

2 Proposed improvements to the CBMs – a historical overview

This section will serve as a resource guide to proposals made for improving the CBMs. Many of these proposals were made by State Parties on a number of difference platforms, the Review Conferences, the Ad Hoc Group, and other occasions. However, civil society, on occasion, has also proposed improvements to the CBM regime. The following section will provide an overview of the proposed recommendations, while detailed descriptions can be found in Annex II.

2.1 Proposals made by State Parties

2.1.1 The Review Conferences

The five yearly Review Conferences and the follow-up meetings are the primary occasion for State Parties to make recommendations for improving any aspect of the Convention and the only opportunity at the moment to implement any agreed changes.

CBMs were first discussed at the Second Review Conference and after five years of weak participation, State Parties agreed that changes needed to be made. As a result CBMs were expanded at the Third Review Conference. The same process reoccurred ten years later, at the Fifth Review Conference, where changes were agreed but never implemented. It is important, however, to note that many more proposals were made than were adopted in 1991 and agreed in 2001. A number of

[16] 2005, however, is one of the few years without second and third addenda.

the proposed recommendations recurred at each discussion round but agreement on their inclusion was never found, such as information on vaccination programmes of the armed forces, the declaration of plant and animal disease outbreaks, and animal and plant biocontrol and inoculant production facilities. Many more, such as France's proposal to display proof that staff at high containment facilities and military personnel is not vaccinated against presumed biological warfare agents,[17] were proposed only once. Some proposals reflected the difficulties that the State Party had with the format of the CBMs, such as Nigeria's proposal to simplify the CBM format.[18] And other proposals sought to improve cooperative relations through the CBMs, such as Yugoslavia's proposal to create a common protein and nucleotide sequence library to prepare software for database analysis.[19]

At the Sixth Review Conference in 2006, the European Union, a group of 11 Latin American countries, South Africa, and Switzerland circulated working papers recommending enhancements to the CBM regime. All working papers emphasized the need to increase participation and improve the quality of submissions.

All CBM proposals made at the four Review Conferences which discussed CBMs can be found in Annex II.

2.1.2 VEREX

As mentioned above, at the Third Review Conference the formation of the Ad Hoc Group of Governmental Experts was agreed. This group was mandated to study possible verification measures for judging compliance to the BWC. This group became known as VEREX and identified 21 possible verification measures. The exchange of data fell under the very general category of "off-site verification measures" and was divided into Data Exchange, under which Declarations and Notifications were found, and Information Monitoring, which included Multilateral Information Sharing. Multilateral Information Sharing, a voluntary data exchange exercise whose topics included for example, the surveillance of disease outbreaks and unusual disease occurrences, the environmental release of genetically modified organisms and other information relevant to the Convention resembled the current CBM regime in terms of procedure. Declarations and Notifications made use of, on the other hand, many of the CBM topics including information on facilities, national biodefence programmes, production capacities and many more. The mandate of VEREX, however, expired after a theoretical analysis of each verification measure and, therefore, it did not discuss practical issues of implementing these measures.

2.1.3 The Verification Protocol

The Ad Hoc Group (AHG), formed at the Special Conference in 1994, was mandated to produce an effective verification mechanism building on the conclusions of VEREX. To this end the AHG convened 24 times and with much difficulty, was making progress in hammering out an all-encompassing protocol to be implemented on top of the treaty. The so-called Verification Protocol, among other things, would have integrated some of the topics of the CBMs as legally binding declarations and contained a new set of CBMs. The AHG produced two texts, the rolling text, a

[17] Summary Record of the 8th meeting of the Second Review Conference of the Biological Weapons Convention (1986) BWC/CONF.II/SR.8 p. 7.
[18] Report of the Committee of the Whole of the Third Review Conference of the Biological Weapons Convention (1991) BWC/CONF.III/17 p. 34.
[19] ibid

document where all propositions were included regardless of objections, and the composite text. The composite text was put forward by Tibor Toth, the chairman of the AHG, when the negotiation was nearing its conclusion and sought to force compromise between unagreed portions of the rolling text. Data exchange under the Protocol was structured in the following way.

2.1.3.1 Confidence building measures

The AHG Protocol maintained only two voluntary CBM-like notifications in the composite text. The first, the communication of the results of an investigation or requests for assistance in response to the occurrence of a disease outbreak; and the second, the voluntary divulgence of a country's national legislation and regulations regarding the access to facilities dealing with relevant pathogens and toxins, and access to areas where an outbreak occurred.[20] A number of other CBMs were drafted into the rolling text of the Verification Protocol but later dropped on production of the composite text.

2.1.3.2 Legally binding declarations

To a large extent, the 1991 CBMs were adopted during the AHG negotiations as the basis for building the declaration regime. The work on declarations during the seven years was substantial. All State Parties agreed that some form of declaration system was necessary to strengthen the Convention, and that it should constitute one of the pillars of the Verification Protocol. Although, it was also agreed that declarations were not the panacea to the Convention's weaknesses, because declarations are only as helpful as they are truthful. As such, State Parties decided that the CBMs were the best starting point to begin discussing legally binding declarations. The AHG spent a substantial amount of time discussing declaration triggers. These triggers determined what activities and characteristics of this activity warranted a declaration. The development of the triggers proved to be a very arduous task basically for two reasons. Firstly, the declarations would have to be triggered only by relevant data without generating too much background noise. If too much irrelevant information was declared than the relevant data would lose credibility. Thus negotiations of very detailed trigger parameters ensued. The second problem, however, was that State Parties could not agree on what information was relevant. Furthermore, creating one standard meant that countries with large biodefence programmes would be declaring much more than others with smaller programmes, creating a much larger burden on these countries. As a result they were much less inclined to have broad declaration triggers. In the case of biodefence facilities, the composite text included a tiered system whereby the declaration triggers were proportional to the size of the programme, i.e. the fewer high security facilities a state could declare the more, lower security facilities it was requested to declare.[21]

Under article IV of the rolling text, declarations were broken into two parts: initial and annual. The initial declaration, to be submitted once, shortly after the coming into force of the Protocol, contained two sections, one on past offensive activities and the other on past defensive efforts. The initial declarations would have required substantially more information than what was required in Form F of the CBM and would serve as a starting point for further declarations. Annual declarations, to be submitted on a yearly basis, would have been composed of six parts: current biodefence

[20] Protocol to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (2001) BWC/AD HOC GROUP/CRP.8 p. 85.
[21] Littlewood J. (2005) The Biological Weapons Convention: A Failed Revolution. Ashgate, Burlington, VT, USA.

activities, maximum containment facilities, high containment facilities, plant pathogen containment facilities, work with listed agents, and production facilities.

In requesting information about facilities the declarations used a number of work-areas to signal misuse potential. This included activities in: detection or diagnosis, decontamination, prophylaxis, physical protection, treatment, pathogenicity/virulence, genetic modification, antibiotic resistance, stability of agents/toxins, toxinology, toxic and other pathological effects and aerobiology. Greater detail was also requested concerning work with listed agents and toxins. Annex 1 of the Protocol consisted of a list of 26 human and zoonotic pathogens, eight plant pathogens, six animal pathogens, and 11 toxins identified as relevant to biosecurity, thus, and the Convention. According to the text any facility working with any of these listed agents/toxins, where such work involved production over a threshold level, genetic modification or intentional aerosolization was to be declared. In terms of production, declarations would have requested information not only on human vaccine production, but also food and beverage production using biological materials, biocontrol agents production and any other microbially produced substances. Furthermore, State Parties were asked to provide an indication of the capacity of the production equipment at each facility.[22]

The Ad Hoc Group spent a considerable amount of time discussing declaration formats, which were 64 pages in length in the rolling text. The declarations formats also made an extensive use of tickboxes and yes or no questions.

2.2 Proposals made by non-governmental organisations

Non governmental organisations (NGOs) have the advantage of being able to recommend more radical courses and are generally free to develop their own agenda. NGOs have become more active in biological arms control of recent but relatively little work has been undertaken on the CBMs. This is partly because it is generally difficult to gain access to the CBMs. The other reason is that the focus of NGO's research was concentrated on the more pressing issues of the time, namely the Verification Protocol. Nevertheless, several NGOs have produced important work on strengthening the CBM regime.

The Stockholm International Peace Research Institute (SIPRI) has produced a series of reports, the Scorpion papers, starting in 1985, covering a wide variety of CBW issues. Number 10, *Strengthening the Biological Weapons Convention by Confidence Building Measures,*[23] examined the first three rounds of data exchange, studied the strengths and weaknesses of the CBM regime and made recommendations for improving the CBM process at the Third Review Conference.

The Royal Society's Group on Scientific Aspects of International Security established, in 1992, a study group to examine the impact of science on biological arms control. The objective of the study group was to come up with a fresh approach to strengthening the BWC, including recommendations for the CBMs.[24]

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[22] Procedural Report of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (2001) BWC/AD HOC GROUP/55-1 .

[23] Geissler E (ed) (1990) Strengthening the Biological Weapons Convention by Confidence Building Measures. SIPRI Chemical and Biological Warfare Studies No 10. Stockholm, Sweden.

[24] Royal Society (1994) Scientific Aspects of Control of Biological Weapons. Royal Society, London, UK.

The University of Bradford, Department for Peace Studies, has, shortly before the last three Review Conferences, produced a report of Key Points summarising the evolution of each BWC article and provided recommendations for improvement at the up-coming Review Conferences. As such, the Key Points papers prepared for the Fourth and Sixth Review Conferences included a chapter on Article V and the CBMs.[25]

The Hamburg Research Group for Biological Arms Control published, as its first Occasional Paper, a report on the completeness, comprehensiveness and accuracy of the CBM Form F, on past offensive and defensive biological weapons programmes. In this study, the CBM declarations on past offensive programmes were compared to information in open sources in order to assess the level of transparency provided by countries with previous BW capabilities. This report also identified a number of ways Form F could be modified in order to promote submissions of higher quality.[26]

The Verification Research, Training and Information Centre (VERTIC) produced a report, several months before the Sixth Review Conference, indicating areas in which improvements could be made on a modular basis achieving stronger arms control cumulatively. One of these proposals is the formation of a CBM unit.[27]

Complete proposals from these five NGOs for improving the CBM regime can be found in Annex II.

3 Catalogue of recommendations

The recommendations are organized as a catalogue. It breaks down and itemizes every aspect of the CBM mechanism and examines options to improve it. This refers not only to the content of the CBM forms but also to the compilation, collection, processing, distribution and use. All aspects of the CBM are inextricably linked and must be improved together for there to be any positive effect. Likewise, it is not possible to improve participation independently of quality or vice versa. Rather both will improve in unison as State Parties gain greater confidence in the CBM mechanism. It is clear, however, the best way to strengthen the CBM is to make their compilation as simple as possible without losing quality. Nevertheless, only universal participation will allow the CBMs to fulfil their mandate of building confidence and as such, must be the goal for any CBM improvement.

The recommendations proposed in this paper have been developed, in some cases, from those that have emerged in previous state to state discussions. They also arise, however, from observing and studying the present situation in the CBM regime. We have sought the insight of experts which have been involved in the issue for many years and also the opinion of State Party representatives. A number of interviews were conducted in order to determine how State Parties would welcome particular CBM reforms. Interviews also helped to delineate the differences in importance afforded to CBMs.

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[25] Hunger I (1996) Confidence Building Measures in Strengthening the Biological Weapons Convention: Key Points for the Fourth Review Conference. University of Bradford, Department of Peace Studies; and Pearson G S (2006) Article V: Consultation and Cooperation. Strengthening the Biological Weapons Convention: Key Points for the Sixth Review Conference. University of Bradford, Department of Peace Studies.

[26] Isla N (2006) Transparency in past offensive biological weapons programmes: An analysis of Confidence Building Measure Form F 1992-2003. Hamburg Centre for Biological Arms Control, Occasional Paper No. 1, June 2006.

[27] VERTIC (2006) A new strategy: strengthening the biological weapons regime through modular mechanisms. Verification Matters, VERTIC Research Reports, Number 6, October 2006.

Thus, the catalogue begins by examining the topics of the present CBMs. It asks whether the seven forms are relevant in building confidence in the compliance of actors to the BWC. Are there any topics which should be added? Or are any of the present topics superfluous? In parallel the catalogue looks at the CBM format. Are there parts of the forms which could be made simpler? Is rewording possible where there is ambiguity? Secondly, the catalogue looks at process reform on an international level and on a national level. Are there ways to improve collection, processing and distribution on the part of the United Nations Department for Disarmament Affairs? For countries which are not participating on a regular basis, what are the impediments? Would bilateral or multilateral assistance bolster participation? Would awareness-raising and emphasizing the importance of CBM participation have any effect? Lastly, this paper summarizes of the Sixth Review Conference regarding the CBMs.

3.1 Existing CBM forms

There are a number of areas in which information is needed in order to develop an image of what treaty relevant activities are being carried out in particular countries. In terms of facilities these relevant areas include:

- Maximum containment units,
- High risk activities and equipment,
- Work with high risk pathogens,
- Production capacity, and
- Biological aerosol testing.

There are, however, other relevant aspects of a country's approach to biological weapons, which should also trigger declarations and these include:

- The presence of an official biodefence programme, and
- The existence of a past offensive biological weapons programme.

These relevant areas mirror the declaration triggers discussed at the AHG. There is no simple method to ensure that only relevant information is requested. Declarations must include those activities which are necessary to building illegal, offensive capabilities. This will give rise to declarations on legitimate biodefence activities, and other relevant activities, such as those identified above, because of the dual use nature of biotechnological activity.

In the current CBMs relevant areas are, for the most part, covered by the various forms, other areas, however, are not. Table 5 shows which current CBM forms cover the relevant trigger activities. Recommendations in the sections below result in part from gaps identified in table 5.

Table 5. Current forms which cover relevant areas of activities

Activities requiring declaration	Declared in CBM as part of
Maximum containment units	Form A1, Form A2
High risk activities and equipment	Form A1, Form A2, Form C, Form D
Work with high risk pathogens	Form A1, Form A2
Production capacity	Form G
Biological aerosol testing	
Official biodefence programme	Form A2
Past offensive and/or defensive BW programmes	Form F

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

Form 0 is generally the first page of any State Party's CBM. For each form, the country can indicate using tick boxes whether there is "nothing to declare", "nothing new to declare" or by leaving it blank, that there is information provided in this form. A number of State Parties have called for a redesign of Form 0. Although, it was introduced in 1991 in order to reduce the burden on states declaring the same information year after year, it has introduced uncertainty in ways that were not predictable. It is often the case that countries indicate there is "nothing to declare" or "nothing new to declare" and nevertheless produce a declaration. In these cases it is not clear whether this information supplants information in previous CBMs or complements it. Another ambiguity is introduced by the Form 0 when a State Party does not tick either box. This should mean that there is something to declare. At times, neither box is ticked nor is there a submission for that particular form. Furthermore, many countries submit empty forms as part of their submission. This also introduces uncertainty as it is not clear whether the country is stating there is nothing to declare or if there was some technical error which led to a blank submission, or if it was simply disregarded for whatever reason.

A new Form 0 should, therefore, be designed, with three possible options: 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.

This paper proposes that an answer to whether the State Party has a national biological defence programme becomes obligatory and is incorporated into Form 0. This information is very important to the data exchange process and is best suited to this section. For Form F, an obligatory submission within five years of the last submission is proposed, therefore the only information which is requested in Form 0 will be the year that the country last submitted information on past offensive and defensive biological programmes. The date of entry into force of the Convention for the State Party should also be requested in Form 0. This is basic information which is also more suited to the beginning of the CBM than its current position in Form F.

Another very important addition to the Form 0 is the request for a national CBM contact point. The contact point should be directly involved in CBM compilation. This would allow direct correspondence between national governments and between the DDA and national governments, allowing simple questions regarding the CBMs to be asked. A specific national contact point would also feel greater responsibility for the CBMs and, therefore, promote their submission. Requesting the information in the CBMs also motivates State Parties to designate a clear CBM-responsible individual to whom relevant national information can be directed. Furthermore, providing a CBM contact point would obligate State Parties to provide some information in the CBMs rather than a general declaration stating that there is nothing to declare.

With these proposals Form 0 would be expanded to provide more general information on the State Party which is submitting the CBMs. As such, the title of the form should be modified to read "Exchange of general information and overview of submitted data."

Finally, this paper recommends that each subsequent form starts with the relevant section of Form 0. State Parties should submit every page of the CBMs, and provide the relevant answer in the header for each form. Clarity as to how the State Party answered each form will be greatly improved, and ambiguous blank submissions will be eliminated.

Recommendations:

- **Redesign format allowing three possible answers 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 for the State Party.**
- **Request national CBM contact point.**
- **Request information on presence of national biological defence programme.**
- **Change title to read "Exchange of general information and overview of submitted data"**
- **Include relevant section of Form 0 at the start of each subsequent form.**

CBM developments agreed at the Sixth Review Conference:

- **The State Parties will designate and provide details on national CBM points of contact.**

3.1.2 Form A

3.1.2.1 Form A1 – Exchange of data on research centres and laboratories

Form A1 requests information on "…centres and laboratories that meet very high national and international safety standards… " under the State Party's jurisdiction, and is later elaborated with the wording: "specialize in permitted activities directly related to the Convention." This formulation has led countries to declare facilities with limited relevance to the Convention. To make this form clearer, it is proposed that the declaration requirement is limited to maximum facilities. For each declared facility in this form, a list of publications and information regarding publication policy should be requested. This would focus the information currently being requested in Form C. Listing publications can also act as a quality control for information submitted on a facility's activity. Lastly, Form A1 could be simplified by the use of tables and tickboxes. For example, a table requesting information on the relevant biological and toxic agents used in trigger activities and would be very simple and provide a high degree of transparency for the facility in question. A list of these relevant agents is provided in Annex IV.

Recommendations:

- **Limit form to maximum biological containment facilities.**
- **Request publication list and information on publication policy for declared facility.**
- **Simplify form using tables and tickboxes.**

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

Form A2 requests information on the national biological defence research and development programme. Obviously, an exchange of information on these programmes and the facilities involved is absolutely indispensable. Form A2 (i) asks the simple question of whether the country engages in biodefence research and development. This question should become mandatory and be moved to Form 0. Furthermore, there is more to a BW defence programme than research and development.

Therefore, this form should be expanded to include information on other aspects of the programme such as military vaccination programmes and biodefence training exercises. The title should be accordingly adapted to read "Exchange of information on national biological defence programmes". Form A2 (ii) and (iii) will deal specifically with the research and development aspects of the programme as in the current forms; the addition of a Form A2 (iv) on other aspects of the programme is recommended.

If the State Party does engage in biodefence activities it is requested to provide a description of the biodefence research and development programme in Form A2 (ii). This form invites countries to proceed to Form A2 (iii) where it should declare "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" (emphasis added by author). It is our opinion that a more explicit declaration trigger should be used. *Substantial proportion* leaves the decision to declare a facility to the submitting country's discretion. It is therefore recommended that any facility whose total financing is more than 50 per cent devoted to the national biodefence programme should be declared in Form A2 (iii). Any other facility involved in the programme should be listed, by name and location, in Form A2 (ii). Furthermore, Forms A2 (ii) and (iii) should be simplified through the use of tables and tickboxes, especially for indicating containment unit floor areas, number of staff, funding, activities carried out and organisms researched. In addition, it is suggested that Form A2 (iii) asks not just for the publication policy and lists of publications, but for all publicly available results of the activities being carried out at the declared facility, such as presentations, seminar papers, posters and patents, and for information on the promotion of contacts between scientists such as conferences, symposia, seminars and similar forums that have been organized at or by the declared facility.

Finally, this paper recommends the addition of Form A2 (iv) on other relevant information regarding the national biological defence programme. This form should request information on military vaccination programmes and on military biodefence training exercises, and provide an opportunity for State Parties to declare any other information relevant to the data exchange.

Recommendations:

- **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) by requiring any facility with more than 50 per cent of its total finances devoted to the national biological defence programme to be declared. All other facilities being involved in the national biodefence programmes should be listed in Form A2 (ii).**
- **Expand Form A2 (iii) paragraphs (viii) and (xi) to include not just publications but all forms of research results.**
- **Request information on the promotion of contacts between scientists such as conferences, symposia, seminars and similar forums that have been organized at the declared facility.**
- **Addition of Form A2 (iv) requesting information on military vaccination programmes, military biodefence training exercises and any other information relevant to the biodefence programme.**
- **Simplify Forms A2 (ii) and (iii) through the use of tables and tickboxes.**

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

Form B part 1 requests background information on outbreaks of reportable infectious diseases, while part 2 requires information on disease outbreaks which deviate from a normal pattern. Disease outbreaks deviating from a normal pattern might be indicators for development or use of biological weapons. Whether this form is useful has been questioned in the past and is open to discussion for two reasons: firstly because the World Health Organization collects data relating to infectious diseases. Outbreaks deviating from a normal pattern would likely be picked up by the new notification requirements of the revised International Health Regulations (IHR) which require notification within 24 hours of any event which might constitute a public health emergency of international concern (PHEIC). It also specifies that any unusual or unexpected event within a country should be reported to the WHO.[28] The new International Health Regulations are set to come into force in 2007. If the intention is to make the CBM as simple as possible, than eliminating information which can be found in other places would be very desirable. In seeking disease outbreak information, interested State Parties could refer to WHO resources. The second reason is that this form differs from the rest of the CBMs, in that the objective is to uncover possible breaches of the Convention rather than to build transparency in legitimate activities. As a verification tool, this measure would almost certainly never work properly. While there are guidelines as to what is an outbreak deviating from normal pattern, ultimately it is up to the reporting country to decide whether an incident constitutes abnormality, and is therefore reported. If a state suspects a disease outbreak could be connected to illicit activities, it would most certainly not want to wait for up to a year before reporting this event to other states, but would use other available channels. Removal of Form B should, therefore, be considered.

There have been proposals to enhance Form B through the inclusion of animal and plant disease outbreaks. Some countries have included this information regardless of whether it is a requirement, for the sake of completeness. Therefore, if Form B is retained then it should be expanded to include animal and plant diseases.

Recommendations:

- **Remove Form B. If Form B is maintained it should be expanded to include information on animal and plant diseases.**

3.1.4 Form C – Encouragement of publication of results and promotion of use of knowledge

Form C calls for State Parties to provide information on the publication of results of activities related to the Convention. The necessity of this form has been questioned because much of the information declared can be found in online databases, such as PubMed. There are also views, however, that if compiled correctly, more information would be provided than can be found in open sources. Information on publicly available research results can provide a good indication of the activities carried out at a certain facility, as well as act as quality control for information submitted on a certain facility. The declared information should then, however, include not only journal publications but all forms of research products, such as presentations, seminar papers, posters, patents, and any other product coming out of relevant activities.

[28] Revision of the International Health Regulations, The Fifty-eighth World Health Assembly (2005) WHA58.3.

In order to focus this declaration requirement on relevant facilities, the information should be requested in Forms A1 and A2 (iii). Form C can then be removed altogether.

Recommendations:
- **Remove Form C. This information should be requested in Forms A1 and A2 (iii) instead.**

3.1.5 Form D – Active promotion of contacts

Form D requests information on opportunities for scientists to meet through conferences, symposia, seminars and other similar fora covering activities relevant to the Convention. Because most States have declared such events retrospectively, this form adds little to the active promotion of contacts between scientists and to transparency. It is recommended that a question on past events is asked in Form A2 (iii) for each facility.

A State Party planning a relevant event should be encouraged instead to inform the DDA at least six months prior to its occurrence. The DDA in turn should publicise this event and related information on its website. Form D can then be removed altogether.

Recommendations:
- **Remove Form D. Information on past events should be requested in Form A2 (iii) instead.**
- **Encourage states to inform DDA about relevant planned events. DDA should publicise upcoming events on its website.**

3.1.6 Form E – Declaration of legislation, regulation, and other measures.

Form E requires information on national legislation, regulation and other measures countries have implemented relevant to the BWC. This is an important declaration because national implementation, beyond the obligatory parliamentary ratification of the BWC, shows support for and also strengthens national legal capacity for sanctioning violations of the norms of the BWC. Although, similar information is requested under United Nations Security Council Resolution 1540 to prevent the proliferation of Weapons of Mass Destruction to terrorists, it would be unwise to remove this form due to its broader coverage in the CBM context. It is recommended that this form be expanded to include measures on preventing bioterrorism, including biosafety and biosecurity measures, and the adoption and use of codes of conduct for life scientists. The declaration requirement on export and import measures should not just cover microorganisms and toxins, but equipment and knowledge as well.

Recommendations:
- **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 just microorganisms and toxins, but equipment and knowledge as well.**

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

Form F requests, firstly, the date the Convention entered into force for the State Party, and then a description of activities undertaken in past bioweapons programmes and/or in defensive biological programmes, if any existed in the State Party. One WEOG state representative suggested deleting this form as it added nothing to the present state of an actor's BW capabilities. On the other hand, it does add greatly to the climate of transparency. Secrecy about past activities will always leave a seed of mistrust. Furthermore, past offensive and defensive activities would have generated a lot of capacity, through the development of equipment, material and knowledge. Declaration of these activities is necessary to develop an image of how capable a State Party is.

First of all, the question on entry into force is of such a general and important nature, that it should be moved to Form 0. Furthermore, there is more to an offensive or defensive programme than research and development. Therefore, this form should be expanded to include information on other aspects of such programmes such as production, testing, weaponization and training. The title should be accordingly adapted to read "Declaration of past activities in offensive and/or defensive biological weapons programmes", and more specific information should be requested regarding facilities, activities, organisms and military doctrine. An expanded Form F is not likely to increase the burden on Member States. In 2005, only one out of the 16 Member State which submitted eight or less CBMs in the last 19 years had anything substantial to declare. And only five countries have ever submitted a declaration on a past offensive BW programme.

It is further recommended that a Form F submission on past national offensive and defensive programmes becomes obligatory at least every five years. This would ensure that any information which has been newly declassified would be provided, any omissions or inaccuracies identified would be corrected and any other information which is considered relevant would be included.[29] For the purpose of this form, we propose that any activity should be declared as a past activity after five years of its being carried out.

Recommendations:

- **Move question on entry into force of the Convention to Form 0.**
- **Change title to read "Declaration of past activities in offensive and/or defensive biological weapons programmes".**
- **Request more specific information with regard to facilities, activities, organisms and military doctrine.**
- **Make submission of Form F, on past offensive and defensive biological programmes obligatory at least every five years.**

3.1.8 Form G – Declaration on vaccine production facilities

Form G requires information on human vaccine production facilities in a State Party, including, the name of the facility, the address and the diseases covered. This form has been criticised as being incomplete. One WEOG state representative even suggested removing it. This is because equipment, technology and processes used for human vaccine production are exactly the same as those used in

[29] For more details on how to improve Form F see Isla N (2006) Transparency in past offensive biological weapons programmes: An analysis of Confidence Building Measure Form F 1992-2003. Hamburg Centre for Biological Arms Control, Occasional Paper No. 1, June 2006.

animal vaccine production, as well as for the production of biocontrol agents and plant inoculants. This form should be expanded to include these other areas of biological production in order to provide a more comprehensive image of large scale production capabilities within a State Party. The title needs to be changed accordingly to read: "Declaration of facilities producing human vaccines, and animal vaccines, biocontrol agents and plant inoculants."

Recommendations:

- **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.**

3.2 New CBM forms

3.2.1 New CBM forms: Aerosolization of agents and toxins

An important activity which is yet to be included in the CBM reporting requirement is the aerosolization of organisms and toxins and their testing. As one of the most efficient ways to distribute a BW agent or a toxin is through the release of an aerosol, work in this field is particularly relevant to the Convention. The declaration of information regarding the aerosolization of any agent and its testing was discussed in the Ad Hoc Group and a respective declaration trigger was included in the rolling text of the Verification Protocol.[30] This paper recommends that the generation and testing of aerosolized agents and toxins, perhaps being focussed on facilities undertaking relevant activities or on specific organisms, should become the focus of an additional CBM form.

Recommendations:

- **A new form should be added to the CBMs covering facilities undertaking activities involving the aerosolization of biological materials. This CBM should be entitled "Exchange of information on biological aerosol facilities"**

3.3 International CBM process reform: expanding the role of the DDA

Reforms to the CBM mechanism in terms of process must be directed at the body that manages their collection, analysis and distribution. This body is the United Nations Department for Disarmament Affairs. The goal of improving the CBM process is to make each step of submitting and receiving the compiled CBMs more simple and efficient, and to make the data more accessible, usable and verifiable.

At the moment, the DDA is mandated only to collect the CBMs, to photocopy them, assemble and bind them alphabetically into a compendium of a thousand pages or more, and distribute them back to State Parties. The CBMs are distributed in paper form to New York and Geneva State Party missions, through which they arrive at their final destination, usually the Ministry of Foreign Affairs. At the moment the only analysis the DDA performs is a five year summary for the Review Conferences, indicating the forms each State Party submitted in the five year period. No annual

[30] Procedural Report of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (2001) BWC/AD HOC GROUP/55-1 pp. 34.

analysis occurs at the UN level. All CBM activities are carried out by two individuals at the DDA on a part-time basis.

The DDA has assumed, so far, a very neutral role. However, this paper argues that the UN should do what is best for its Member States and actively contribute to the strengthening of the CBM regime. The best way to strengthen the CBMs from an institutional perspective is to increase midstream processing. A number of options are discussed below.

3.3.1 Institutional CBM task force

First and foremost, the BWC should have a dedicated task force which could carryout any activities relating to the Convention. Amongst other things, it could undertake all tasks relating to the CBMs. This would provide an organisational support structure and a focal point which State Parties could contact with problems and routine questions. This task force could be responsible for all administrative activities of the CBMs including collection, processing and distribution. As there is little routine contact over BWC issues between State Parties, other than the CBMs, the BWC task force could consist of 2 to 3 people and should be headquartered in Geneva. Furthermore, the fact that a dedicated task force is assigned to handle the CBMs would bring the regime legitimate importance. This task force could also be assigned to regularly make proposals to improve the CBM process and act as the middleman between countries requesting compilation assistance and those offering.

The idea of a BWC secretariat has been discussed for some time. The Ad Hoc Group rolling text refers to such a group as the Technical Secretariat for the Organisation for the Prohibition of Biological Weapons (OPBW) and specifies organisational structures and processes in Article IX.[31] The idea of a secretarial CBM unit also arose during the Third Review Conference.[32] Civil society has also promoted the idea. Nicholas Sims suggested an OPBW might be too ambitious for the time being, however, other less demanding proposals, such as annual meetings of State Parties supported by a scientific advisory panel and permanent secretary, might be more achievable.[33] The scientific advisory panel, as Sims suggested, could highlight the areas of advancing technology which require greater transparency and control. This could lead to the formulation of new regulatory measures, perhaps taking the form of new CBMs if necessary. VERTIC, as mentioned above, has also advocated for the formation of a CBM unit.

The task force would also be the target for all international process reform recommendations listed below.

Recommendations:

- **Create a permanent BWC task force for all matters related to the Convention, including CBMs.**

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[31] Procedural Report of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (2001) BWC/AD HOC GROUP/55-1 pp. 167.

[32] Report of the Committee of the Whole of the Third Review Conference of the Biological Weapons Convention (1991) BWC/CONF.III/17.

[33] Sims N (2005) Remedies for the Institutional Deficit of the BTWC: Proposals for the Sixth Review Conference. Review Conference Paper No. 12. Strengthening the Biological Weapons Convention. Department of Peace Studies, University of Bradford.

CBM developments agreed at the Sixth Review Conference:

- **An Implementation Support Unit (ISU) will be created. This unit is tasked to carry out many of the tasks that are described in this section, including dealing with CBM issues and increasing participation.**

3.3.2 Collection

Collection refers to the means of gathering CBMs from the State Party by the DDA. Currently most State Parties submit their CBMs in paper form to the Geneva office of DDA, however, only recently has the option to submit CBMs electronically been provided by the BWC meetings secretariat.[34] However, no proactive collection activities on the part of the DDA are undertaken to promote submission from State Parties.

The DDA should be given a stronger collection mandate. In particular it should be mandated to issue reminders to State Parties before the 15th of April deadline and afterwards. It should also be able to make enquiries about missing CBMs, missing pages or any technical irregularity which might arise from a submission.

Collection should be done electronically whenever possible. State Parties should collect national data in electronic form and submit the CBM to the DDA in portable document format (pdf) or in another agreed format. Electronic submission would eliminate the costs of shipping paper CBMs and make the sharing information much easier. It is likely that many State Parties have already implemented a system to allow electronic submission but continue in paper because the option to submit electronically was not made available. Virtually all State Party representatives favoured an electronic submission when interviewed. Naturally there is a concern that making electronic submission obligatory might alienate resource scarce countries which do not yet have the capacity. Therefore, initially State Parties should have the option to submit either an electronic or paper version. The DDA might then be able to shoulder the costs of scanning the paper documents for eventual electronic distribution.

Recommendations:

- **Provide stronger collection mandate allowing the DDA to issue reminders and inquiries.**
- **Encourage CBM submission in electronic form.**

CBM developments agreed at the Sixth Review Conference:

- **CBM shall be collected when possible in electronic form.**
- **The ISU will issue a notice three months before the April 15th deadline.**

3.3.3 Processing/analysis

To process the CBMs is to bring the data into a form which is more easily made use of. On an administrative level, the DDA copies, assembles and binds the CBMs into a compendium. A participation list is provided every five years for the Review Conferences. Despite the lack of a formal UN analysis, a majority of State Party representatives admitted that their country rarely

[34] United Nations of Geneva website: www.unog.ch/bwc, CBM - Electronic Distribution Trial page (accessed 4/09/2006).

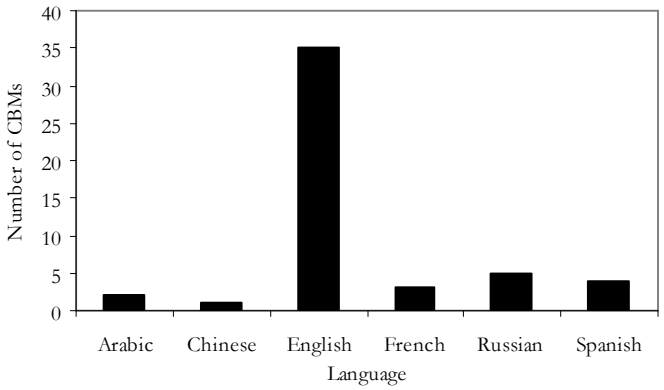
engaged in any systematic analysis of the CBMs. Clearly, without an analysis, little information can be drawn from the CBMs. Unfortunately, there is also little agreement in the international community as to the role of the DDA. In this respect, some believe that the responsibilities of the DDA would be overstepped by conducting an analysis which might reflect badly on State Parties. Furthermore, a WEOG State Party representative suggested that countries would likely be interested in different aspects of the CBMs, therefore, making analysis costly and not useful for all State Parties. On the other hand, a large number of State Party representatives favoured some sort of analysis, although interests did differ between which CBM forms should be analysed.

There are a number of methods which could make the CBMs more accessible.

3.3.3.1 Translation

The vast majority of CBMs are in English, as can be seen from Table 6, despite the fact that CBMs can be submitted in any of the six official UN languages. Not all countries have the capacity to translate the CBMs into an appropriate language. Translation, therefore, would prove very helpful and allow all CBMs to be examined regardless of their origin. Naturally the major barrier to a translation is the cost. Translation of the CBMs into all official UN languages would require significant funding. Furthermore, finding a political compromise to translate them into only one language will likely not be found. All State Party representatives suggested they would favour a translation but found the cost and the politics an impasse. There are several alternatives to a UN translation. The first is to encourage states to submit the CBMs in more than one language, as China did at the beginning of the CBM process. The second is to encourage State Parties to share translations of CBMs prepared for their own use. Thirdly, State Parties could agree to translate the CBMs into the language most often used in that particular year. In 2005, the language would be English. This would benefit the largest number of countries since they already use the language. It would also reduce the cost by reducing the number of CBMs to be translated. Ultimately, if the CBM forms are redesigned and more use of tickboxes is made, answers could be more easily interpreted, minimizing the need for a translation. A short translation guide to the language used in the tables could also be provided with the forms, to make interpretation clearer.

Table 6. Language of CBM declarations from 2005



3.3.3.2 Low-level analysis: participation summaries

An annual participation summary indicating which State Parties participated in that year would be the least demanding form of analysis. It would serve to highlight "good" performers. These participation lists could be expanded to include previous years' submissions, so that one could see how consistently a State Party participated over the years. It could include submission dates to indicate the timeliness of CBM submission and could also provide an indication of which CBM forms were submitted by State Parties.[35]

Being the most superficial form of analysis, a participation summary should encounter no objection from State Parties. Preparing such a summary would be relatively easy and inexpensive, and require little administrative change other than the expanded mandate.

3.3.3.3 Medium-level analysis: CBM summaries

A medium level analysis of the CBMs would be a summary of the declared data reducing the large amount of information into several pages, which can be easily reviewed. If a reader is interested in particular aspects of the summary he/she could consult the actual CBM. The summary should not include any interpretation of the CBMs. The publication "Confidence Building Needs Transparency" is a good example of a CBM summary. This report summarises CBM participation over 12 years, and condenses information on biodefence facilities, maximum containment facilities, and vaccine production facilities.[36] An annual summary could be prepared by the DDA and should:

- Be no longer than 5-6 pages.
- Present a statistical analysis of CBM data, such as, number of maximum containment facilities and biodefence facilities, the number of vaccine production facilities, summary of outbreaks deviating from normal patterns, etc.
- Avoid focussing on the activity of any particular country but cover all submissions objectively.
- Have an established framework for summarising so that interpretation of CBMs is avoided.

A summary makes the CBMs much more accessible by greatly reducing the amount of information to be reviewed by countries who otherwise find little or no use for the CBM mechanism.

3.3.3.4 High-level analysis: off-site CBM verification

Verification of the information declared in the CBMs would be a high-level form of analysis because there is a possibility that information supplied by State Parties is demonstrated to be false. This type of analysis is likely to cause concern because the DDA would essentially verify the truthfulness of submitted information. Nevertheless, it is a valuable activity which would contribute greatly to transparency, and should be done, if not by the DDA, then by civil society actors.

This form of analysis would be very labour intensive due to the large amount of information in the CBMs. It involves verifying the data presented in the CBMs with other information. In many cases open source information can be used, however, for areas such as biodefence programmes,

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[35] This analysis would be similar to that which is presented at the Review Conferences but should be prepared annually.
[36] Hunger I (2005) Confidence Building Needs Transparency: A summary of data submitted under the Bioweapons Convention's confidence building measures. The Sunshine Project, September 2005.

verification resources will be very difficult to find since this information is usually protected within military ranks. An example of this type of analysis was used in the publication "Transparency in past offensive biological weapons programmes."[37]

The decision to adopt this kind of analysis must take into consideration that it may improve the quality of submissions because countries will be more likely to submit accurate and truthful data. However, it may also discourage countries, such as those with little CBM experience, from participating due to the intense scrutiny with which the CBMs would be analysed. Avoiding criticism may be enough of a motivation to not submit at all. One format, which would allow this analysis to take place, is if only a portion of the CBMs were analysed, for example vaccine production sites and maximum containment facilities. Furthermore, State Parties should be given the opportunity to respond to allegations of inaccuracy in some form of discussion platform allowing for constructive dialogue to eliminate ambiguities.

3.3.3.5 On-site CBM validation visits

The best way to build confidence between countries would be to conduct CBM validation visits where states can prove the accuracy of the information provided in the CBM. This type of analysis is much more intrusive and would have to be voluntary on the part of the hosting and visiting country. This paper recommends that the possibility for voluntary multilateral validation visits be accommodated. State Parties who wish to establish a precedent and set an example for transparency under the BWC should offer and attend visitations of this kind. Offers for visits could be publicized through the DDA as opportunities for the promotion of contacts.

3.3.3.6 Discussion platform

A discussion platform would allow ambiguities in the CBMs to be discussed in an informal way. Several State representatives suggested that this type of forum would amount to a finger pointing exercise in which countries accuse each other of non-conformity. However, this is certainly not the purpose of this platform; rather it should serve to build confidence by allowing State Parties to engage in constructive dialogue on activities related to the Convention.

The format this platform takes must not necessarily follow previous BWC meetings. It can take place *ad hoc*, annually or virtually, through an internet site. The discussion platform could also be used to trade CBM compilation strategies and offer assistance to State Parties struggling with submitting a CBM. It could facilitate the transfer of technology, thus providing an incentive for countries attempting to establish a biotechnology capacity to participate. Submission of a CBM should be mandatory if a State Party wishes to take part in these discussions.

Recommendations:

- **Translate CBMs to improve usability by all State Parties.**
- **Allow DDA to conduct low, mid and high level analysis of CBMs.**
- **Encourage voluntary on-site CBM validation visits.**
- **Develop a discussion platform for clarifying CBM ambiguities.**

[37] Isla N (2006) Transparency in past offensive biological weapons programmes: An analysis of Confidence Building Measure Form F 1992-2003. Hamburg Centre for Biological Arms Control, Occasional Paper No. 1, June 2006.

CBM developments agreed at the Sixth Review Conference:

- **The ISU will inform State Parties about CBM returns and provide statistics on participation.**

3.3.4 Distribution

Several months after the 15th of April deadline, the DDA distributes the assembled CBM compendium back to State Parties through New York and Geneva missions. The CBMs will make their way through the government mail chain until reaching the Ministry of Foreign Affairs, normally the final resting place.

The most important step to be taken in terms of distribution is to enable electronic CBM distribution, thereby reducing labour times and costs, and eliminating transit period. The assembled CBM compendium should also be sent directly to the Ministry of Foreign Affairs, or whichever national body is designated as the contact point, in order to establish direct dialogue between the DDA and the CBM end-user. This CBM contact point should be an individual or an office which is directly involved in the CBM compilation.

The internet is another method of distribution and is one that best serves to build a transparent system. This would greatly increase the CBMs accessibility for the general public and allow interested parties, such as NGOs and academic institutions to analyse them. As of early-2007 six countries: Australia, Finland, Malaysia, Sweden, Switzerland and the United Kingdom, allowed their CBMs to be distributed openly on the BWC meeting secretariat webpage.[38] There is, however, some reluctance to making the CBMs public. One WEOG state representative suggested placing CBMs on the internet would constitute a threat to national security and another stated it would allow access to non-members of the BWC. Other parties would only agree so long as the decision was implemented on a multilateral basis. Several individuals suggested that making the CBMs so widespread might also deter countries from participating, because the CBMs would face much more scrutiny. This is a possibility; however, it is equally likely to improve the participation in the CBM mechanism by allowing greater analysis and more publicity. State Parties would then be more likely to see the importance of participating. Furthermore, the greater the number of readers the more reward there is in participating and the more shame in not. Nevertheless, as a method of distribution the ability to download the CBMs from a website would also reduce costs and make CBM handling simpler. To begin with the hosting webpage could be secure to allow access only to State Parties. Several State Party representatives suggested a password protected website could be an acceptable compromise.

Recommendations:

- **Provide opportunity to receive CBMs electronically.**
- **Send assembled CBM compendium directly to designated contact point.**
- **Distribute CBMs through an open or protected website.**

CBM developments agreed at the Sixth Review Conference:

- **Submitted CBM returns will be distributed through a secure internet site designed and maintained by the DDA.**

[38] United Nations of Geneva website: www.unog.ch/bwc, CBM - Electronic Distribution Trial page (accessed 4/09/2006).

3.4 National CBM process reform

National process reform refers to possible activities the international community, or the BWC task force, could undertake to improve submission by working face to face with State Parties. Clearly there are obstacles preventing State Parties from participating, otherwise all member states would submit CBMs. We suggest that there are likely three groups of State Parties who do not participate: a) those who struggle with compiling a CBM, b) those who feel they have nothing to contribute or have no confidence in the CBM mechanism and c) those who have something to hide. The purpose of suggesting national process reforms is to assist the first two groups with CBM submissions. The third group, most likely comprising a very small number, if any, will stand out when obstacles preventing other State Parties from participating are removed. This will allow other non-proliferation efforts to be used in order to bring them into line with the BWC norms.

3.4.1 Assistance to Member State

At the moment, the only form of assistance offered to State Parties in compilation of CBM data and submission is a guide circulated by the Canadian government[39] available to download for State Parties and several short suggestions by the BWC meeting secretariat at the DDA.[40] In spite of the Canadian guide, several State Party representatives have complained that establishing the inter-institutional communication pathway for gathering CBM data, as well as integrating industry, is not an easy task, and the forms themselves are at times difficult to complete. These issues are augmented when State Parties face economic and organisational hardships. State Parties should, therefore, have the opportunity to request a more comprehensive form of assistance from countries whose experience with CBM compilation is more extensive. This assistance should take the form of a telephone or email hotline; international workshops held annually, *ad hoc*, or upon request; allowing observers from the country requesting assistance to monitor the information gathering step in the more experienced country; or a task group tutoring data compilation in the country requesting assistance. The assistance could be based upon geographical groupings, such as suggested by one State Party representative, historical, such as the Commonwealth, or economic alliances. Ultimately providing assistance to countries should be part of any nation's or international organisation's policy to strengthen the BWC. The EU Joint Action[41] and the Action Plan in support of the Joint Action[42] for example are excellent opportunities to provide assistance. The EU, according to its updated list of priorities in the six month progress report on implementation of the WMD strategy, allocates funds precisely to building a platform on which to exchange experiences relevant to the compilation of CBMs.[43]

The Joint Action consists of two projects the first, involves a number of workshops held in different regions with the aim of reaching universality. The second project consists of expert visits and consultations in countries yet to adopt sufficient national legislation. A CBM project could have a similar strategy, in which individuals responsible for CBM compilation in EU countries provide guidance to the corresponding individuals in non-participating countries. CBM compilation in 2006

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[39] Confidence Building Measures: Increasing transparency without taxing resources, Canadian Department of Foreign Affairs and International Trade. Available online: http://www.opbw.org/cbms/Guide_files/v3_document.htm (accessed 21/03/2007).

[40] United Nations of Geneva website: www.unog.ch/bwc, Participating in the CBMs page (accessed 4/09/2006).

[41] Council Joint Action in support of the Biological and Toxin Weapons Convention, in the framework of the EU Strategy Against the Proliferation of Weapons of Mass Destruction (2006) 2006/184/CFSP.

[42] EU Action Plan on biological and toxin weapons, complementary to the EU Joint Action in support of the BTWC.

[43] Council General Secretariat Decision, Implementation of WMD strategy – Updated list of priorities (2006) 5184/07.

was universal throughout the EU's 25 members for the first time. It is, therefore, now in a position to take a leading role in promoting CBM submission in other regions of the world.

Recommendations:

- **Provide assistance in the form of a telephone or email hotline; international workshops held annually, *ad hoc*, or upon request; allowing observers from the country requesting assistance to monitor the information gathering step in the more experienced country; or a task group tutoring data compilation in the country requesting assistance.**
- **Make CBM compilation assistance a part of any national or international effort to strengthen the BWC.**

CBM developments agreed at the Sixth Review Conference:

- **The ISU shall centralize requests and offers of assistance regarding the submission of CBMs.**

3.4.2 Raising awareness and emphasizing importance

Despite CBM submission being a political obligation for all BWC Member States, many countries have not provided CBMs. Their failure to submit shows a lack of importance assigned to the mechanism and to the Convention as a whole. The purpose of raising awareness and emphasizing the importance of participation in the CBM regime is to attempt to bring countries that have lost confidence in the mechanism back to participating in it, in order to strengthen the BWC. All State Parties should feel ownership in preventing the proliferation of biological weapons and strengthening the Convention. It is clear that the political obligation to submit a CBM is not sufficient to create this feeling of ownership.

Awareness-raising could take the form of regional promotional workshops in areas of low CBM participation, such as the African continent and the pacific island region (see Table 3). These workshops must emphasize the importance of establishing a transparent climate in order to monitor compliance to the BWC. It must be shown that transparency can only be improved if all BWC State Parties compile and submit CBMs. Regional awareness raising workshops could be combined with other aspects of improving international security, for example, reporting requirements of the UNSC Resolution 1540 or the CWC. It could also be combined with providing assistance with CBM compilation, although countries that do not see the purpose of taking part in the CBM mechanism are not likely to request assistance. The minimum which should be done is to re-emphasize the importance of submitting a CBM on every occasion possible. The Sixth Review Conference failed to stress this by not taking decisive actions to increase participation.

Recommendations:

- **Raise awareness over the importance of participating in the CBM regime in below average participation regions through workshops and other appropriate events.**

3.5 Discussions and decisions on CBMs at the Sixth BWC Review Conference[44]

The consensual conclusion of the Sixth Review Conference is an important achievement given the failure to produce a final declaration five years before. Therefore, for better or for worse, the actual progress at this conference can be described as the creation of more constructive atmosphere for discussion rather than effective treaty improvement. Under the ingenious leadership of the conference President, Masood Khan, tension on a number of issues was avoided. Progress was made in some areas, however, the Review Conference stopped short of taking the steps optimists were hoping for, such as, enhancing transparency by reviewing the CBMs during intercessional process meetings, or discussing compliance assessment.

Besides the creation of an implementation support unit (ISU), greater transfer of technology and cooperation under Article X, national implementation of BWC provisions, and the generation and agreement on topics for a new intersessional process, improvement to the CBMs was one of five issues which dominated the Review Conference.

Despite many proposals for change by a number of countries and their being an understanding of "the urgent need to increase the number of State Parties participating" the CBMs, by the end of the Conference, were left exactly as they were in 1991. Furthermore, little institutional change was agreed upon in order to improve their processing. The recommendations presented in this paper remain as valid before the Sixth Review Conference as they do in its wake.

Proposition for CBM reform were made by a number of State Parties including a group of Latin American countries, France (on behalf of the EU), South Africa, the Russian Federation, the United Kingdom, the United States, and most vociferously, Switzerland. Switzerland proposed an entirely new CBM format[45] and recommended a much stronger mandate for the DDA to promote better quality and more universal participation.[46] All proposals regarding the CBMs during the Sixth Review Conference can be found in Annex II.

The following decisions regarding the CBMs were taken at the Sixth Review Conference:[47]

- Electronic submissions were encouraged. Any paper submissions will be made available in electronic form by the DDA.
- Submissions will be made available on a secure internet website.
- Assistance with CBM submission will be provided.
- Participation lists and other information on CBM returns will be provided yearly.
- National contact points will be requested from each State Party.
- Reminders will be sent to the points of contact three months before the April 15th deadline.
- All of the above activities related to the CBMs will be carried out by the Implementation Support Unit.

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[44] Final Document of the Sixth Review Conference of the Biological Weapons Convention (2006) BWC/CONF.VI/6
[45] Proposal for the Modification of the Format of Confidence-building Measures Forms submitted by Switzerland for the Sixth Review Conference of the Biological Weapon Convention (2006) BWC/CONF.VI/WP.37.
[46] Actions to Improve the Confidence Building Measures submitted by Switzerland for the Sixth Review Conference if of the Biological Weapons Convention(2006) BWC/CONF.VI/WP.14.
[47] Final Document of the Sixth Review Conference of the Biological Weapons Convention (2006) BWC/CONF.VI/6.

State Parties also decided that the CBMs were not to be circulated beyond the DDA without express permission of the State Party.[48] This reference to the confidentiality of the CBMs has never before been made and is contrary to the goals of transparency and openness. It is also in stark contrast to growing trend of making CBMs available on the internet. Civil society access to the CBMs has been difficult in the past but will now become much more unlikely.

The decision to not make CBMs a topic of an intersessional meeting between 2007 and 2010 was also an unexpected result, especially given the number of State Parties which called for precisely that. Thus, the next opportunity to review the CBMs will be at Seventh Review Conference in 2011. Until then, it is clear that without a concerted effort to improve participation, the mechanism will likely have even less importance among non-participants. A lack of emphasis on CBM participation and the likely decline of first-time participants might also erode the participation of State Parties which submit CBMs on a more regular basis.

[48] Report of the Committee of the Whole of the Sixth Review Conference of the Biological Weapons Convention (2006) BWC/CONF.VI/3 pp. 33.

4 Summary of recommendations

Form 0

- **Redesign format allowing three possible answers 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 for the State Party.**
- **Request national CBM contact point.**
- **Request information on presence of national biological defence programme.**
- **Change title to read "Exchange of general information and overview of submitted data".**
- **Include relevant section of Form 0 at the start of each Form.**

Form A1

- **Limit form to maximum biological containment facilities.**
- **Request publication list and information on publication policy for declared facility.**
- **Simplify form using tables and tickboxes.**

Form A2

- **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) by requiring any facility with more than 50 per cent of its total finances devoted to the national biological defence programme to be declared. All other facilities being involved in the national biodefence programmes should be listed in Form A2 (ii).**
- **Expand Form A2 (iii) paragraphs (viii) and (xi) to include not just publications but all forms of research results.**
- **Request information on the promotion of contacts between scientists such as conferences, symposia, seminars and similar forums that have been organized at the declared facility.**
- **Addition of Form A2 (iv) requesting information on military vaccination programmes, military biodefence training exercises and any other information relevant to the biodefence programme.**
- **Simplify Forms A2 (ii) and (iii) through the use of tables and tickboxes.**

Form B

- **Remove Form B. If Form B is maintained it should be expanded to include information on animal and plant diseases.**

Form C

- **Remove Form C. This information should be requested in Forms A1 and A2 (iii) instead.**

Form D

- **Remove Form D. Information on past events should be requested in Form A2 (iii) instead.**
- **Encourage states to inform DDA about relevant planned events. DDA should publicise upcoming events on its website.**

Form E

- **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 just microorganisms and toxins, but equipment and knowledge as well.**

Form F

- **Move question on entry into force of the Convention to Form 0.**
- **Change title to read "Declaration of past activities in offensive and/or defensive biological weapons programmes".**
- **Request more specific information with regard to facilities, activities, organisms and military doctrine.**
- **Make submission of Form F, on past offensive and defensive biological programmes obligatory at least every five years.**

Form G

- **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.**

Form H

- **A new form should be added to the CBMs covering facilities undertaking activities involving the aerosolization of biological material. This CBM should be entitled "Exchange of information on biological aerosol facilities".**

Institutional support

- **Create a permanent BWC task force for all matters related to the Convention, including CBMs.**

Collection

- **Provide stronger collection mandate allowing the DDA to issue reminders and inquiries.**
- **Encourage CBM submission in electronic form.**

Processing / analysis

- **Translate CBMs to improve usability by all State Parties.**
- **Allow DDA to conduct low, mid or high level analysis of CBMs.**
- **Encourage voluntary on-site CBM validation visits.**
- **Develop a discussion platform for clarifying CBM ambiguities.**

Distribution

- **Provide opportunity to receive CBMs electronically.**
- **Send assembled CBM compendium directly to designated contact point.**
- **Distribute CBMs through an open or protected website.**

Assistance with CBM compilation

- **Provide assistance in the form of a telephone or email hotline; international workshops held annually, ad hoc, or upon request; allowing observers from the country requesting assistance to monitor the information gathering step in the more experienced country; or a task group tutoring data compilation in the country requesting assistance.**
- **Make CBM compilation assistance a part of any national or international effort to strengthen the BWC.**

Awareness-raising

- **Raise awareness over the importance of participating in the CBM regime in below average participation regions through workshops and other appropriate events.**

Annex I: Redesigned CBM declaration template

Form 0

Exchange of general information and overview of submitted data.

1. Date: _____

2. State Party to the Convention:_____

3. Date of entry into force of the Convention for the State Party:_____

4. CBM contact point:_____

5. Postal Address, telephone and electronic mail:_____

_____

_____

6. Please indicate how each form is answered.[49]

Measure	**A. New information to declare (this is the only valid data):**	**B. Nothing new to declare, data remains valid as of year:**[50]	**C. Nothing to declare:**
Form A, part 1		Year:	
Form A, part 2 (ii)		Year:	
Form A, part 2 (iii)		Year:	
Form A, part 2 (iv)		Year:	
Form B		Year:	
Form E		Year:	
Form F	Last submission in year:		
Form G		Year:	
Form H		Year:	

Please mark the appropriate box(es) or provide the year as requested in column B if relevant.

[49] Notation of the forms uses the agreed 1991 format. If changes are implemented, notation of the forms should be adapted.

[50] Please provide year of last valid declaration

7. 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?

Yes	No

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form A, part 1		Year:	

Exchange of information on maximum containment research centres and laboratories.

Declare research centres/laboratories with any maximum containment laboratories meeting those criteria for such maximum containment as specified in 1983 WHO Laboratory Biosafety Manual, such as those designated as biosafety level 4 (BL4) or P4 or other standards.

1. Name of facility: [51] _____
[52] _____

2. Responsible public or private organization: _____

3. Location and postal address: _____

4. Using the table below, indicate, in approximate percentage of total funding, the sources of financing acquired for conducting the reported activity.

Ministry of Defence	Other government	Private industry	Civil society	Other non-government	International organisation

[51] Please provide a Form A1 for each relevant facility

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

5. Using the table below, indicate the aggregate size in m² of the maximum containment laboratory(ies).

Less than 30 m²	**30 to 100 m²**	**100 to 500 m²**	**More than 500m²**

6. Using the table below, indicate which organisms, using appropriate code or by providing the name of the organisms from Annex IV, are being used in the named activities.

Activity[53]	**Organism**
Prophylaxis	
Pathogenicity	
Virulence	
Diagnostic techniques	
Detection	
Aerobiology (including testing and evaluation)	
Medical treatment	
Toxinology	
Physical protection	
Decontamination	
Other	

7. Provide a list of publicly-available journal publications, presentations, seminar papers, posters, patents, and any other product resulting from relevant research undertaken at this facility in the last 12 months. Include authors, titles, and full references.

8. Any other relevant information:[54]

_____

_____

_____

_____

[53] In accordance with relevant activities identified in the Confidence Building Measure form A2. BWC/CONF.III/23.
[54] Relevant information also includes information on closure or conversion of the facility. Please provide this information in this fom under paragraph 8.

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form A, part 2 (ii)		Year:	

Exchange of information on national biological defence programme.

(ii) Exchange of information on national biological defence research and development programme – Description.

If paragraph 7 of Form 0 was answered affirmatively please complete Form A part 2 (ii), Form A part 2 (iii) and Form A, part 2 (iv).

1. Briefly describe the objective of the programme and summarize the principal research and development activities conducted in the programme:

_____

_____

_____

_____

2. Provide the date of commencement of this programme:_____

3. Using the table below, tick the appropriate box indicating the financing and its sources for the biological defence research and development programme.

	Under 1 million EUR[55]	**1-10 Million EUR**	**Over 10 million EUR**
Ministry of Defence			
Other government			
Private industry			
Civil society			
Other non-government			
International organisation			

4. Are aspects of this programme conducted under contract with industry, academic institutions, or in other non-defence facilities? Tick the relevant answer.

Yes	**No**

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

_____

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

_____

_____

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

[55] Or equivalent in local currency.

8. Provide a declaration in accordance with Form A, part (iii) for each facility, both governmental and non-governmental, whose total financing is more than 50% devoted to the national biological defence research and development programme within the territory or the reporting State, or under its jurisdiction or control anywhere. Please list here, by name and location, all other facilities, both governmental and non-governmental, whose total financing is less than 50% devoted to the national biological defence research and development programme.

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form A, part 2 (iii)		Year:	

(iii) Exchange of information on national biological defence research and development programme – Facilities

Complete a form for each facility declared in accordance with paragraph 8 in Form A, part (ii).
In shared facility, provide the following information for the biological defence research and development portion only.

1. Name of facility: _____
2. Location and _____
   postal address: _____
   _____
   _____

3. Using the table below indicate the aggregate area in m^2 of containment levels present in the facility under question.

Biosecurity level containment units	Less than 30 m^2	30 to 100 m^2	100 to 500 m^2	More than 500 m^2
BL4				
BL3				
BL2				
Less than BL2				

4. Information on staff and funding of the facility.
(i) Total number of staff, including contract staff:_____

(ii) Using the table below, indicate the composition of personnel at the facility.

Division	Below 10	11-50	Above 50
Military			
Civilian			

(iii) Using the table below, indicate how personnel is divided by category.

Division	Below 10	11-50	Above 50
Scientists			
Engineers			
Technicians			
Administrative and support			

(iv) Tick relevant scientific disciplines represented in scientific and engineering staff:

Microbiology_____	Toxicology_____	Mathematics_____
Virology_____	Toxinology_____	Biomedical engineering _____
Bacteriology_____	Medicine_____	Chemical engineering _____
Mycology_____	Pharmacology_____	Mechanical engineering _____
Parasitology_____	Aerobiology_____	Industrial engineering _____
Biochemistry_____	Entomology_____	Meteorology_____
Molecular biology_____	Human/veterinary pathology_	Other (list)_____
Immunology_____	Biophysics_____	_____
Genetics_____	Bioinformatics_____	_____
Physiology_____	Information technology _____	_____

(v) Using the table below, indicate the source(s) and amounts of funding for the work conducted in the facility.

Ministry of Defence	Other government	Private industry	Civil society	Other non-government	International organisation

(vi) Using the table below, indicate the funding levels for the following programme areas in approximate percentage of total funding.

Research	Development	Test and evaluation

5. (i) Using the below table, indicate which organisms, using the appropriate code or by providing the name of the organisms from Annex IV, are being used in the named activities.

Activity	**Organism**
Prophylaxis	
Pathogenicity	
Virulence	
Diagnostic techniques	
Detection	
Aerobiology (including testing and evaluation)	
Medical treatment	
Toxinology	
Physical protection	
Decontamination	
Other	

(ii) Any other relevant information:

_____

_____

_____

_____

6. (i) Briefly describe the facility's policy with regards to publishing results:

_____

_____

_____

_____

(ii) Provide a list of publicly-available journal publications, presentations, seminar papers, posters, patents, and any other product resulting from research undertaken at this facility in the last 12 months. Include authors, titles, and full references.

7. Provide a list of conferences, symposia, seminars and other similar forums which promoted contact between scientists, and that have occurred in the last 12 months in connection with this facility. The following information should be provided.

(i) name of forum

(ii) date and place[56]

(iii) main subjects of conferences

[56] In case different from address of facility.

Form A, part 2 (iv)

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form A2, part 2 (iv)		Year:	

(iv) Exchange of information on other relevant information on the national biological defence programme.

1. Military vaccination programmes.

Please include the following information:

- does the State Party have a military vaccination programme?

Yes	No

- organisms vaccinated against
- troop divisions vaccinated
- number of troops vaccinated
- vaccination policy

2. Military BW defensive training exercises.

Please include the following information:

- does the State Party conduct BW defence training exercises?

Yes	No

- timing and location
- troop divisions involved
- number of troops involved
- description and purpose of exercise
- additional training exercises planned
- were any visitors present, who?

3. Any other information relevant to the national biological defence programme that the State Party wishes to declare:

_____

_____

_____

_____

Form B

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form B		Year:	

Exchange of 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 symptoms: _____
7. Details of symptoms:
   - respiratory _____
   - circulatory _____
   - neurological/behavioural _____
   - intestinal _____
   - dermatological _____
   - nephrological _____
   - other _____

   _____

8. Using the table below, tick the appropriate box indicating how this outbreak deviates from the normal patterns.

Type	Development	Place of occurrence	Time of occurrence	Symptoms	Virulence pattern

Form E

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form E		Year:	

Exchange of information on legislation, regulation, and other measures.

State parties should be prepared to submit copies of legislation, regulation, codes of conduct for life scientists or written details of other measures on request to the United Nations Department for Disarmament Affairs or to an individual State Party.

National implementation relating to:	Legislation	Regulation	Other measures	Last amended in year
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	Year:
Exports of micro-organisms and toxins,[57] equipment and other relevant materials	Yes/No	Yes/No	Yes/No	Year:
Imports of micro-organisms and toxins,[58] equipment and other relevant materials	Yes/No	Yes/No	Yes/No	Year:
Bioterrorism[59]	Yes/No	Yes/No	Yes/No	Year:
Use of Codes of Conducts for life scientists	Yes/No	Yes/No	Yes/No	Year:

[57] Micro-organisms pathogenic to man, animals and plants in accordance with the Convention.
[58] ibid
[59] This includes regulation on national transfers of agents, biosecurity and biosafety regulation and other relevant measures to prevent bioterrorism.

Form F

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form F		Year:	

Exchange of information on past activities in offensive and/or defensive biological weapons programmes.

For purposes of this data exchange, a programme, offensive or defensive, is considered to be "past" after 5 years and should be declared in this form.

1. Past offensive biological weapons programmes:

- Does the State Party have a past offensive biological weapons programme?

Yes	No

- Period(s) of activity
- Summary of the activities indicating whether work was performed concerning research and development, test and evaluation, production, weaponisation, stockpiling of biological agents, the destruction programme of such agents and weapons, military doctrine and other related information. This should include:
- the name of all research centre(s)/laboratory(ies) involved in the reported activities and their current status.
- a list of all organism which were weaponized.
- a list of all organisms produced on a large-scale.

2. Past defensive biological programmes:

- Does the State Party have a past defensive biological weapons programme?

Yes	No

- Period(s) of activity

- Summary of the activities indicating whether work was performed concerning prophylaxis, studies on pathogenicity and virulence, diagnostic techniques, aerobiology, detection, treatment, toxinology, physical protection, decontamination and other related research. Include the name of all research centre(s)/laboratory(ies) involved in the above activities and the specific organism which were used.

A complete Form F must be provided within five years of the year of the last submission. The new Form F should include any information which has been newly declassified, correct any omissions or inaccuracies identified in this period, and include any other information which is considered relevant.

Form G

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form G		Year:	

Declaration of facilities producing human vaccines, animal vaccines, biocontrol[60] agents and plant inoculants.

Provide the following information for each relevant facility.

1. Name of facility: _____

2. Location and postal address: _____

3. Using the table below, name the diseases which are covered by the products of this facility with regards to their intended targets.

Human vaccine	Animal vaccine	Plant biocontrol agents and inoculants

[60] Biocontrol agent is meant to be understood as a living organism or biologically active substance originating from such an organism used for the prevention, elimination or reduction of plant diseases, pests or unwanted plants.

Form H

Measure	A. New information to declare (this is the only valid data):	B. Nothing new to declare, data remains valid as of year:	C. Nothing to declare:
Form H		Year:	

Exchange of information on biological aerosol facilities.

Please provide the following information for each facility which conducts research and development in the aerosolization of biological material.

1. Name of facility:[61] _____

2.Location and _____

postal address: _____

3. (i) Using the table below, tick the appropriate box indicating the type of the aerosol testing location used (more than one is possible).

Other	Aerosol chamber less than 1m^3	Aerosol chamber 1-10 m^3	Aerosol chamber more than 10m^3	Open air testing

3. (ii) If *other* please elaborate on the location:

_____

_____

3. (iii) Please indicate which biological materials are aerosolized in the relevant research and development conducted at this facility:

_____

_____

[61] For each relevant facility submit an individual Form H.

4. Briefly describe the objective of the study and summarize the principal research and development results:

_____

_____

_____

_____

Annex II: Past proposals for CBM improvement

1 List of documents

Document code	Document description
BWC/CONF.I/10	Final Declaration of the First Review Conference of the Biological Weapons Convention (1980)
BWC/CONF.II/SR.8	Summary Record of the 8th meeting of the Second Review Conference of the Biological Weapons Convention (1986)
BWC/CONF.II/9	Report of the Committee of the Whole of the Second Review Conference of the Biological Weapons Convention (1986)
BWC.CONF.II/13/II	Final Declaration of the Second Review Conference of the Biological Weapons Convention (1986)
BWC/CONF.II/EX/2	Report of the Ad Hoc Meeting of the Second Review Conference of the Biological Weapons Convention (1987)
BWC/CONF.III/16	Regional Confidence Building Measures submitted by the countries of the Hexagonale (Austria, Czech and Slovak Federal Republics, Hungary, Italy, Poland, and Yugoslavia). Third Review Conference of the Biological Weapons Convention (1991)
BWC/CONF.III/17	Report of the Committee of the Whole of the Third Review Conference of the Biological Weapons Convention (1991)
BWC/CONF.III/23	Final Declaration of the Third Review Conference of the Biological Weapons Convention (1991)
BWC/AD HOC GROUP/CRP.8	Protocol to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (2001)
BWC/AD HOC GROUP/55-1	Procedural Report of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (2001)
BWC/CONF.V/COW/1 Annex 1	Report of the Committee of the Whole of the Fifth Review Conference of the Biological Weapons Convention (2001) Annex 1
BWC/CONF.VI/3	Report of the Committee of the Whole of the Sixth Review Conference of the Biological Weapons Convention (2006)
BWC/CONF.VI/6	Final Document of the Sixth Review Conference of the Biological Weapons Convention (2006)
BWC/CONF.VI/INF.3/Add.1	Background Information Document on the History and Operation of the Confidence-Building Measures for the Sixth Review Conference of the Biological Weapons Convention (2006)

Document code	Document description
BWC/CONF.VI/WP.4	EU paper on the enhancement of the CBM process, prepared by France on behalf of the European Union for the Sixth Review Conference of the Biological Weapon Convention (2006)
BWC/CONF.VI/WP.14	Actions to Improve the Confidence Building Measures, submitted by Switzerland for the Sixth Review Conference of the Biological Weapons Convention (2006)
BWC/CONF.VI/WP.12	Confidence Building Measures, submitted by Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru and Uruguay for the Sixth Review Conference of the Biological Weapon Convention (2006)
BWC/CONF.VI/WP.21	Confidence Building Measures, submitted by South Africa for the Sixth Review Conference of the Biological Weapon Convention (2006)
BWC/CONF.VI/WP.37	Proposal for the Modification of the Format of Confidence-building Measures Forms, submitted by Switzerland for the Sixth Review Conference of the Biological Weapon Convention (2006)

2 Review Conference proposals

2.1 Second Review Conference and Ad Hoc Meeting of Scientific and Technical Experts

- State Parties should exchange information on inoculation programmes of armed forces (proposed by Finland).[62]
- State Parties should invite scientists from other countries to visit declared facilities (proposed by Australia, Canada, Germany, Italy, Netherlands, Norway, Spain and the United States).[63]
- State Parties should provide appropriate access to declared facilities for foreign representatives (proposed by Australia, Canada, Germany, Italy, Netherlands, Norway, Spain and the United States).[64]
- State Parties should provide civil society with information gathered from CBMs for public health purposes (proposed by Australia, Canada, Germany, Italy, Netherlands, Norway, Spain and the United States).[65]
- State Parties should exchange information on the expansion of laboratories and modernization of its equipment (proposed by Sweden).[66]
- State Parties should exchange information on animal and plant diseases (German Democratic Republic).[67]
- The Primary recipient of disease outbreak information should be the WHO rather than the DDA (German Democratic Republic).[68]

[62] BWC/CONF.II/9 pp. 19
[63] ibid
[64] BWC/CONF.II/9 pp. 20
[65] ibid
[66] BWC/CONF.II/9 pp. 22
[67] BWC/CONF.II/EX/2 attachment pp. 28

- State Parties should exchange information on laboratories and producers of materials used in genetic engineering technology (proposed by Hungary).[69]
- State Parties should promote joint research projects for peaceful activities relevant to the Convention (proposed by Hungary).[70]
- State Parties should be encouraged to supply information on laws and regulations relating to the safety of genetic engineering technology (proposed by Hungary). [71]
- State Parties should exchange information on laboratory or production plant accidents (proposed by Italy). [72]
- State Parties should supply proof that the staff at high containment facilities and military personnel is not vaccinated against presumed biological warfare agents (proposed by France).[73]

2.2 Third Review Conference

Adopted recommendations

- Addition of Form 0, allowing a statement of "nothing to declare" or "nothing new to declare". It was thought that the addition of this form would simplify CBM submission by not over burdening states with submitting the same data year after year.
- Expanded Form A: to include greater detail on biodefence research and facilities.
- Expanded Form B: to include background information on reportable disease outbreaks.
- Addition of Form E: declaration of legislation, regulation and other measures.
- Addition of Form F: declaration on past activities in offensive and/or defensive biological research and development programmes.
- Addition of Form G: declaration of vaccine production facilities.

Proposed recommendations not adopted

- State Parties should exchange information on the organisation of national data reporting systems for infectious disease (proposed by France).[74]
- Bilateral and multilateral visits of scientists to biodefence research programmes facilities should be promoted (proposed by France).[75]
- State Parties should exchange information on military vaccination programmes (proposed by France[76] and Finland[77]).
- State Parties should exchange information on disease outbreaks affecting animal and plants (proposed by France).[78]
- Form B, requesting information on disease outbreaks, should be removed (proposed by the USSR).[79]

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[68] ibid
[69] BWC/CONF.II/EX/2 attachment pp. 29
[70] ibid
[71] ibid
[72] BWC/CONF.II/SR.8
[73] ibid
[74] BWC/CONF.III/17 pp. 29
[75] ibid
[76] ibid
[77] BWC/CONF.III/17 pp. 43
[78] BWC/CONF.III/17 pp. 30

- State Parties should exchange information on laboratory safety rules including vaccinations, observations, and quarantines (proposed by the USSR).[80]
- A unit for "following-up the fulfilment of the obligations of State Parties" with regards to the CBM regime should be established (proposed by Yugoslavia).[81]
- Protein and nucleotide sequence libraries to prepare software for database analysis should be established (proposed by Yugoslavia).[82]
- A simplified format for the CBM should be adopted (proposed by Nigeria).[83]
- State Parties should exchange information on animal vaccine production sites (proposed by Finland and Canada).[84]
- CBM structure should be redesigning to facilitate computerizing processing and access to data (proposed by Hungary).[85]
- State Parties should exchange information on equipment and materials in declared facilities (proposed by Hungary).[86]
- State Parties should exchange information on military training against BW warfare and possible exchange visits to observe exercises (proposed by Hungary).[87]
- Direct contact between declared facilities, for example through direct exchange of contact information should be promoted (proposed by Hungary).[88]
- A form on open air releases should be added (proposed by Germany).[89]
- An Ad Hoc Group for CBMs and verification should be created to examine and further improvements to the CBM regime (proposed by Sweden).[90]
- CBM implementation should be promoted on a regional basis (proposed by countries of Hexagonale – Austria, Czech and Slovak Federal Republic, Hungary, Italy, Poland and Yugoslavia).[91]
- State Parties should exchange information on the transfer of treaty relevant material (proposed by countries of Hexagonale – Austria, Czech and Slovak Federal Republic, Hungary, Italy, Poland and Yugoslavia).[92]

2.3 Fifth Review Conference

Proposed improvements

- Modified Form A: to include information on high security facilities undertaking research with group 4 animal pathogens (proposed by South Africa).[93]

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[79] ibid
[80] BWC/CONF.III/17 pp. 31
[81] BWC/CONF.III/17 pp. 34
[82] ibid
[83] ibid
[84] BWC/CONF.III/17 pp. 36 and 37
[85] BWC/CONF.III/17 pp. 44
[86] ibid
[87] BWC/CONF.III/17 pp. 45
[88] ibid
[89] BWC/CONF.III/17 pp. 50
[90] BWC/CONF.III/17 pp. 52
[91] BWC/CONF.III/16 pp. 1
[92] BWC/CONF.III/16 pp. 2
[93] BWC/CONF.V/COW/1 Annex 1, pp. 38

- Modified Form B: to include an exchange of information on outbreaks of contagious animal and plant pathogens (proposed by the European Union).[94]
- Modified From C: to be more focussed and effective (proposed by the European Union). [95]
- Modified Form E: to include information on the transfer of microorganisms and toxins and relating legislation, regulation and procedures, as well as the transfer of dual-use equipment, health and safety issues and penal legislation (proposed by the European Union).[96]
- Modified Form G: to include an exchange of information on animal vaccine production facilities (proposed by the European Union[97] and South Africa[98]).
- Addition of Form H: to include an exchange of information over biocontrol agents and plant inoculants (proposed by South Africa).[99]
- The call for State Parties to establish a national entity responsible for the implementation of the CBM regime (proposed by the European Union).[100]

2.4 Sixth Review Conference

2.4.1 European working paper[101]

The European Union paper divides proposals into technical, political and CBM recommendations. The technical recommendations are as follows:

- State Parties should expand the use of multiple choice questions.
- State Parties should implement an electronic CBM form allowing faster circulation.
- State Parties that are in the position to do so should provide support to others.

The political recommendations are as follows:

- DDA should be allowed to send out pre and post April 15th reminders.
- State Parties should be invited to designate a contact point

The recommendations to the CBM forms themselves take this form:

- Form 0 should be clarified by adding two possible answers for each form.
- The need to declare all maximum containment (level 4) facilities should be clarified, while not deterring State Parties from declaring others which meet very high security standards.
- Form D should be expanded to include past and planned seminars.

2.4.2 Latin American working paper[102]

The Latin American paper, circulated on behalf of Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru and Uruguay contained six recommendations to improve the CBM regime. These were:

- To provide assistance to State Parties requesting it.

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94 BWC/CONF.V/COW/1 Annex 1, pp. 36
95 BWC/CONF.V/COW/1 Annex 1, pp. 37
96 Ibid
97 Ibid
98 BWC/CONF.V/COW/1 Annex 1, pp. 38
99 BWC/CONF.V/COW/1 Annex 1, pp. 39
100 BWC/CONF.V/COW/1 Annex 1, pp. 37
101 BWC/CONF.VI/WP.4
102 BWC/CONF.VI/WP.12

- To review the current CBMs and their formats.
- To prepare guidelines to improve CBM implementation.
- To restructure the CBM forms to improve their interpretability regardless of language.
- To design new forms if necessary.
- To establish a panel of experts to assist in CBM duties

2.4.3 South African working paper[103]

South Africa submitted a working paper on the CBMs at the Sixth Review Conference. This paper raises questions on the ability of the CBMs to increase confidence even if there were universal participation or if the quality improved. It also asks whether all the information requested in the CBM is relevant and useful to the mechanism of confidence building. The paper recommends that CBM formats are made more user-friendly and useful, and that the translation and other means of making the CBM more accessible in other languages be discussed.

2.4.4 Swiss working papers[104]

Switzerland provided two working papers for the Sixth Review Conference. The first proposes methods to improve participation and increase quality within the CBM regime. This paper proposes improvements in four areas:

- Making existing forms more efficient:
  - Streamline existing forms, for example Form 0.
  - Provide clarification on what information is required and where.
  - Replace written entry questions with tick boxes.
- Making CBMs more accessible:
  - Make CBMs available online. The entire CBM can be made available or it can be released in sections.
  - Submit information in electronic format.
- Defining a stronger role for DDA by providing a clearer and possibly enhanced mandate:
  - Raise awareness of State Parties and promote and explain the CBM system.
  - Issue reminders of CBM deadlines.
  - Act as intermediary between states requesting assistance and those offering.
  - Verify plausibility of information submitted, clarify ambiguities and request missing pages.
  - Provide basic statistics on CBM participation each year.

The second Swiss working paper introduces an entirely new CBM format. The Swiss forms were designed to eliminate any technical difficulties, make the CBMs more user-friendly and minimise any ambiguities. The content of the form, however, remains almost entirely identical to that agreed upon at the Third Review Conference in 1991.

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[103] BWC/CONF.VI/WP.21
[104] BWC/CONF.VI/WP.14 and BWC/CONF.VI/WP.37

2.4.5 The United States, the United Kingdom and the Russian Federation[105]

The three depositories of the BWC issued a statement during the review of Article V on cooperation and consultation, reminding State Parties that the CBMs should be not be circulated further than the DDA, other State Parties, and the WHO without express permission of that State Party.

The United States also suggests that countries should include in the CBMs information regarding their efforts to adopt national legislation in support of the BWC.

3 Recommendations from non-state actors

3.1 SIPRI Scorpion series[106]

Proposed improvements[107]

- State Parties should define more precisely the term "directly related to the Convention" in order to clarify what information is needed in Form A1.
- State Parties should consider requesting the WHO to collect disease outbreak data
- The DDA should translate the CBMs into English.
- State Parties should establish national bodies and procedures to perform CBM duties.
- The form on maximum containment facilities end with an opportunity to state that there are no, or no additional BL4 research centres or laboratories within or outside the territory of the report State Party undertaking activities relevant to the Convention.
- State Parties should declare all facilities *involved* not *specialized* in activities permitted by the Convention.
- The form on facilities with other containment units should end with an opportunity to state that there are no, or no additional research centres or laboratories within or outside the territory of the reporting State Party with containment units undertaking activities relevant to the Convention.
- State Parties should declare where protective encapsulating suits are being used with Risk Group III and IV biological agents and toxins.
- State Parties should declare where research with specific organisms is being carried out in BL2 facilities.
- State Parties should declare more information on research with toxins, e.g. on laboratories with or without containment units undertaking protective or prophylactic research against the hostile use of toxins; and on additional toxin research and production facilities which are partially or wholly funded by the ministry of defence.
- State Parties should agree on a list of biological and toxin agents which are required to be taken into account when reporting on facilities and outbreaks.
- State Parties should declare more specific information regarding intoxinations.
- State Parties should declare information regarding vector research, unusual vector occurrences, and the occurrence of vectors harbouring Risk Group III and IV agents.

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[105] BWC/CONF.VI/3 pp.33

[106] Many of the recommendations are no longer relevant today because they were adopted at the Third Review Conference and beyond.

[107] Geissler E (ed) (1990) Strengthening the Biological Weapons Convention by Confidence Building Measures. SIPRI Chemical and Biological Warfare Studies No 10. Stockholm, Sweden.

- State Parties should declare governmental publications, publications issued by the armed forces, publications from research funded by the Ministry of Defence, and other relevant publications, covering activities with Risk Group III and IV agents.
- State Parties should declare information regarding forthcoming events for the promotion of contacts and notify the DDA in order to allow other State Parties to participate.
- State Parties should declare information regarding meetings organised by the Ministry of Defence or Foreign Affairs.
- The WHO, OIE, FAO, and other international organisations should consider participating in the exchange of information over forthcoming events and publications.
- State Parties should provide information regarding the exchange of scientists.
- State Parties who have not yet done so should declare their compliance to the BWC. Others should withdraw reservations from the Geneva Protocol.
- State Parties should declare information regarding legislative measures, prevention of proliferation, protection against unauthorized access to facilities, animal and plant pathogens, vaccine development and usage, proving or testing grounds, and the mentioning of the Convention in textbooks.

3.2 The Royal Society[108]

Proposed improvements:

- State Parties should establish a secretariat for dealing with CBMs: an administrative office would be able to issue reminders and follow-up on non-participating State Parties, as well as undertake secretarial work on collection and distribution. It would be able to undertake some analysis and verification/monitoring of the declared information. This office could also provide assistance to countries struggling with CBM submission and establish risk areas of verification.
- Simplified declarations should be designed: the Royal Society suggested making the CBMs more complicated would discourage countries already struggling with data compilation. The same applies to the compliance of private industry with requesting more detailed information. The Royal Society suggests that "clarity and simplicity are cardinal requirements".

3.3 University of Bradford Key Points

The following recommendations were proposed in 1996: [109]

- State Parties should clarify the focus of Form A1, to include information on maximum containment research facilities.
- State Parties should broaden the focus of Form A2 to include all aspects of the national biological defence programme.
- State Parties should limit the scope of Form C to the publications produced as a result of work funded in part by the Ministry of Defence.
- State Parties should provide advance notice of relevant events in Form D and provide a scientific contact point.

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[108] Royal Society (1994) Scientific Aspects of Control of Biological Weapons. Royal Society, London, UK.
[109] Hunger I (1996) Confidence Building Measures, in Strengthening the Biological Weapons Convention: Key Points for the Fourth Review Conference. University of Bradford, Department of Peace Studies.

- State Parties should provide a contact point from which relevant legislation and regulation can be acquired with regards to Form E.
- State Parties should broaden the scope of Form F to include all aspects of the past national offensive and defensive biological programmes.
- State Parties should include animal vaccine production sites in Form G and broaden the required information to all licensed and non-licensed vaccine production facilities.
- A focal point at the DDA should be created in order to perform all activities related to the CBMs, including their collection, distribution and analysis.
- State Parties should share any CBM translations made.

Key Points for the Sixth Review Conference from 2006, contained a recommendation to discuss the CBMs as part of an intersessional process between 2007 and 2011, using the same two week expert meeting and one week State Party meeting format as the previous intersessional meetings. The paper also recommends requesting additional information on level 4 animal pathogens and the production of animal vaccines and plant biocontrol agents. [110]

3.4 The Hamburg Research Group for Biological Arms Control[111]

The following recommendations were made in the Hamburg Research Group's assessment of CBM Form F declarations on past offensive programmes:

- Submissions from countries with past offensive programmes, and who have not yet made a declaration in Form F, should be encouraged.
- The open answer format of Form CBM F should be maintained in order to allow the State Party to provide the information which it believes is relevant. Specific points of interest should be provided to guide State Parties through compiling a comprehensive Form F submission.
- The following eight categories should be used as points of interest: 1) administration 2) research, 3) development, 4) field testing, 5) production, 6) stockpiling, 7) military doctrine and 8) conversion.
- Updates of the Form F submissions should be promoted.
- Discussion on past activities should be encouraged and a forum for such an opportunity should be created.

[110] Pearson G S (2006) Article V: Consultation and Cooperation in Strengthening the Biological Weapons Convention: Key Points for the Sixth Review Conference. University of Bradford, Department of Peace Studies.
[111] Isla N (2006) Transparency in past offensive biological weapons programmes: An analysis of Confidence Building Measure Form F 1992-2003. Hamburg Centre for Biological Arms Control, Occasional Paper No. 1, June 2006.

3.5 VERTIC[112]

VERTIC produced a report, several months before the Sixth Review Conference, indicating areas in which improvements could be made on a modular basis achieving stronger arms control cumulatively. One of these areas is a CBM unit. This unit would be become responsible for CBM administration, facilitating submissions, reviewing the CBM mechanism, and providing a basic assessment of the CBMs.

[112] VERTIC (2006) A new strategy: strengthening the biological weapons regime through modular mechanisms. Verification Matters, VERTIC Research Reports, Number 6, October 2006.

Annex III: The current CBM forms[113]

Form 0
- Declaration form on "Nothing to Declare" or "Nothing New to Declare".

Measure A, Part 1
- Exchange of data on research centers and laboratories that meet very high national or international safety standards (WHO BL4/P4).

Measure A, Part 2
- Exchange of information on national biological defence research and development (R&D) programs, including declarations of facilities where biological defence R&D programs are conducted. This measure also includes information relating to contractors and on available publications.

Measure B
- Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins that seem to deviate from the normal pattern.

Measure C
- Encouragement of publication of results of biological research directly related to the Convention and promotion of use of knowledge.

Measure D
- Active 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.

Measure E
- Declaration of legislation, regulations and other measures including exports and/or imports of pathogenic micro-organisms in accordance with the Convention.

Measure F
- Declaration of past activities in offensive and/or defensive biological R&D programmes since 1 January 1946.

Measure G
- Declarations on vaccine production facilities, licensed by the State Party for the protection of humans.

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[113] Final Declaration of the Third Review Conference of the Biological Weapons Convention (1991) BWC/CONF.III/23 p. 6.

Annex IV: Biological and toxic agents relevant to the reporting requirements of the Confidence Building Measures

A-Viruses
A1. Crimean-Congo haemorrhagic fever virus
A2. Eastern equine encephalitis virus
A3. Ebola virus
A4. Sin Nombre virus
A5. Junin virus
A6. Lassa fever virus
A7. Machupo virus
A8. Marburg virus
A9. Rift Valley fever virus
A10. Tick-borne encephalitis virus
A11. Variola major virus (Smallpox virus)
A12. Venezuelan equine encephalitis virus
A13. Western equine encephalitis virus
A14. Yellow fever virus
A15. Monkeypox virus

B-Bacteria
B1. Bacillus anthracis
B2 . Brucella melitensis
B3. Brucella suis
B4. Burkholderia mallei
B5. Burkholderia pseudomallei
B6. Francisella tularensis
B7. Yersinia pestis
B8. Coxiella burnetii
B9. Rickettsia prowazekii
B10. Rickettsia rickettsii

C-Protozoa
C1. Naegleria fowleri

D-Animal pathogens
D1. African swine fever virus
D2. African horse sickness virus
D3. Blue tongue virus
D4. Foot and mouth disease virus
D5. Newcastle disease virus
D6. Rinderpest virus

E-Plant pathogens
E1. Colletotrichum coffeanum var. virulans
E2. Dothistroma pini (Scirrhia pini)
E3. Erwinia amylovora
E4. Peronospora hyoscyami de Bary f.sp. tabacina (Adam) skalicky
E5. Ralstonia solanacearum
E6. Sugar cane Fiji disease virus
E7. Tilletia indica
E8. Xanthomonas albilineans

Toxins

F-Bacteriotoxins
F1. Botulinum toxins
F2. Clostridium perfringens toxins
F3. Staphylococcal enterotoxins
F4. Shigatoxins

G-Phycotoxins
G1. Anatoxins
G2. Ciguatoxins
G3. Saxitoxins

H-Mycotoxins
H1. Trichothecene toxins

I-Phytotoxins
I1. Abrins
I2. Ricins

J-Zootoxins
J1. Bungarotoxins