

## INFORMAL ADVANCE REPORT OF THE MEETING OF EXPERTS

### Introduction

1. The Final Document of the Sixth Review Conference 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 (BWC/CONF.VI/6), in the Decisions and Recommendations section, contained the following decision:

"The Conference decides:

- (a) To hold four annual meetings of the States Parties of one week duration each year commencing in 2007, prior to the Seventh Review Conference, to be held not later than the end of 2011, to discuss, and promote common understanding and effective action on:
  - (i) Ways and means to enhance national implementation, including enforcement of national legislation, strengthening of national institutions and coordination among national law enforcement institutions;
  - (ii) Regional and sub-regional cooperation on implementation of the Convention;
  - (iii) National, regional and international measures to improve biosafety and biosecurity, including laboratory safety and security of pathogens and toxins;
  - (iv) Oversight, education, awareness raising and adoption and/or development of codes of conduct with the aim of preventing misuse in the context of advances in bio-science and bio-technology research with the potential of use for purposes prohibited by the Convention;
  - (v) With a view to enhancing international cooperation, assistance and exchange in biological sciences and technology for peaceful purposes, promoting capacity building in the fields of disease surveillance, detection, diagnosis, and containment of infectious diseases: (1) for States Parties in need of assistance, identifying requirements and requests for capacity enhancement; and (2) from States Parties in a position to do so, and international organizations, opportunities for providing assistance related to these fields;
  - (vi) Provision of assistance and coordination with relevant organizations upon request by any State Party in the case of alleged use of biological or toxin weapons, including improving national capabilities for disease surveillance, detection and diagnosis and public health systems.

- (b) Each meeting of the States Parties will be prepared by a one week meeting of experts. The topics for consideration at each annual meeting of States Parties will be as follows: items (i) and (ii) will be considered in 2007; items (iii) and (iv) in 2008; item (v) in 2009; and item (vi) in 2010. The first meeting will be chaired by a representative of the Group of the Non-Aligned Movement and Other States, the second by a representative of the Eastern European Group, the third by a representative of the Western Group, and the fourth by a representative of the Group of the Non-Aligned Movement and Other States.
- (c) The meetings of experts will prepare factual reports describing their work;
- (d) All meetings, both of experts and of States Parties, will reach any conclusions or results by consensus;
- (e) The Seventh Review Conference will consider the work and outcome of these meetings and decide on any further action."

2. By resolution 62/60, adopted without a vote on 5 December 2007, the General Assembly, *inter alia*, requested the Secretary-General to continue to render the necessary assistance to the depositary Governments of the Convention and to provide such services as may be required for the implementation of the decisions and recommendations of the Review Conferences including all assistance to the annual meetings of the States parties and the meetings of experts.

#### Organization of the Meeting of Experts

3. In accordance with the decision of the Sixth Review Conference, the 2008 Meeting of Experts was convened at the Palais des Nations in Geneva from 18 to 22 August 2008, under the Chairmanship of Ambassador Georgi Avramchev of the former Yugoslav Republic of Macedonia.

4. At its first meeting, on 18 August 2008, the Meeting of Experts adopted its agenda (BWC/MSP/2008/MX/1) and programme of work (BWC/MSP/2008/MX/2/Rev.1) as proposed by the Chairman. The Chairman also drew the attention of delegations to four background papers prepared by the Implementation Support Unit (BWC/MSP/2008/MX/INF.1, /INF.2, /INF.3, and /INF.4).

5. At the same meeting, following a suggestion by the Chairman, the Meeting of Experts adopted as its rules of procedure, *mutatis mutandis*, the rules of procedure of the Sixth Review Conference, as contained in Annex II of the Final Document of the Review Conference (BWC/CONF.VI/6).

6. Mr. Richard Lennane, Head of the Implementation Support Unit, served as Secretary of the Meeting of States Parties. Mr. Piers Millett, Political Affairs Officer, Implementation Support Unit, served as Deputy Secretary. Ms. Ngoc Phuong Huynh, Associate Political Affairs Officer, Implementation Support Unit, served in the Secretariat.

#### Participation at the Meeting of Experts

7. Ninety-six States Parties to the Convention participated in the Meeting of Experts as follows: Albania, Algeria, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belgium, Benin, Botswana, Brazil, Brunei Darussalam, Bulgaria, Canada, China, Chile, Colombia, Costa Rica, Croatia, Cuba, Cyprus, Czech Republic, Denmark, Ecuador, Finland, France, Georgia, Germany, Ghana, Greece, Guatemala, Holy See, Honduras, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Libyan Arab Jamahiriya, Lithuania, Malaysia, Malta, Mexico, Moldova, Morocco, Netherlands, New Zealand, Nigeria, Norway, Oman, Pakistan, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sudan, Swaziland, Sweden, Switzerland, Tajikistan, Thailand, The former Yugoslav Republic of Macedonia, Tunisia, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela (Bolivarian Republic of), Viet Nam, Yemen and Zambia.

8. In addition, four states that had signed the Convention but had not yet ratified it participated in the Meeting of Experts without taking part in the making of decisions, as provided for in rule 44, paragraph 1, of the rules of procedure: Egypt, Myanmar, Nepal and the Syrian Arab Republic.

9. Three states, Cameroon, Israel and Mauritania, neither parties nor signatories to the Convention, participated in the Meeting of Experts as observers, in accordance with rule 44, paragraph 2 (a).

10. The United Nations, including the Office for Disarmament Affairs (UNODA), the United Nations Institute for Disarmament Research (UNIDIR), the United Nations Environment Programme (UNEP) and the United Nations Security Council Resolution 1540 Committee attended the Meeting of Experts in accordance with rule 44, paragraph 3.

11. The European Commission, the International Centre for Genetic Engineering and Biotechnology (ICGEB), the International Committee of the Red Cross (ICRC), the Organization for Economic Cooperation and Development (OECD), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO) and the World Organisation for Animal Health (OIE) were granted observer status to participate in the Meeting of Experts in accordance with rule 44, paragraph 4.

12. In addition, at the invitation of the Chairman, in recognition of the special nature of the topics under consideration at this Meeting and without creating a precedent, 13 scientific, professional, academic and industry bodies participated in informal exchanges in the open sessions as guests of the Meeting of Experts: the American Biological Safety Association, the Asia-Pacific Biosafety Association, AstraZeneca Plc, the European Biosafety Association, GlaxoSmithKline, the InterAcademy Panel on International Issues, the International Biosafety Working Group, the International Network of Engineers and Scientists for Global Responsibility, the International Union of Biochemistry and Molecular Biology, the International Union of Pure and Applied Chemistry, the J. Craig Venter Institute, the National Academy of Sciences (United States), and the International Council for the Life Sciences.

13. Fifteen non-governmental organizations and research institutes attended the Meeting of Experts under rule 44, paragraph 5.

14. A list of all participants in the Meeting of Experts is contained in documents BWC/MSP/2008/MX/INF.5 and /INF.5/Add.1.

#### Work of the Meeting of Experts

15. In accordance with the programme of work (BWC/MSP/MX/2008/2/Rev.1), the Meeting of States Parties heard introductory statements from the following 20 States Parties: China, Colombia, Cuba on behalf of the Group of the Non-Aligned Movement and Other States, France on behalf of the European Union, Georgia, Germany, India, Indonesia, Iran (Islamic Republic of), Japan, Libyan Arab Jamahiriya, Morocco, Nigeria, Norway, Pakistan, Peru, Republic of Korea, Russian Federation, Saudi Arabia, and the United States of America. The Meeting also heard an introductory statement from one international organisation, the World Organisation for Animal Health (OIE).

16. Between 19 and 21 August, the Meeting of Experts held a number of sessions devoted to national, regional and international measures to improve biosafety and biosecurity, including laboratory safety and security of pathogens and toxins (agenda item 5). Thirty-five States Parties, one observer State, seven international organisations, and six guests of the Meeting made presentations or statements during these sessions. Between 21 and 22 August, the Meeting of Experts held a number of sessions devoted to oversight, education, awareness raising and adoption and/or development of codes of conduct with the aim of preventing misuse in the context of advances in bio-science and bio-technology research with the potential of use for purposes prohibited by the Convention (agenda item 6). Twenty-two States Parties, two international organisations, and two guests of the Meeting made presentations or statements during these sessions.

17. The Chairman, under his own responsibility and initiative, prepared a paper listing considerations, lessons, perspectives, recommendations, conclusions and proposals drawn from the presentations, statements, working papers and interventions on the topics under discussion at the Meeting. The Meeting of Experts noted that this paper had not been agreed and had no status. It was the Chairman's view that the paper could assist delegations in their preparations for the Meeting of States Parties in December 2008 and in its consideration of how best to "discuss, and promote common understanding and effective action on" the topics in accordance with the decision of the Sixth Review Conference. The paper prepared by the Chairman is attached as Annex I to this Report.

18. In the course of its work, the Meeting of Experts was able to draw on a number of working papers submitted by States Parties, as well as on statements and presentations made by States Parties, international organizations and guests of the Meeting, which were circulated in the Meeting.

#### Documentation

19. A list of official documents of the Meeting of Experts, including the working papers submitted by States Parties, is contained in Annex II to this Report. All documents on this list

are available on the Implementation Support Unit website at <http://www.unog.ch/bwc> and through the United Nations Official Document System (ODS), at <http://documents.un.org>.

#### Conclusion of the Meeting of Experts

20. At its closing meeting on 22 August 2008, the Meeting of Experts heard an interim report from the Chairman on activities to secure universal adherence to the Convention, in accordance with the decision of the Sixth Review Conference. The Meeting noted that the Chairman would prepare the provisional agenda and programme of work for approval and adoption at the Meeting of States Parties to be held from 1 to 5 December 2008.

21. At the same meeting, the Meeting of Experts adopted its Report by consensus, as contained in document BWC/MSP/2008/MX/CRP.2, as orally amended, to be issued as document BWC/MSP/2008/MX/3.

Annex I

CONSIDERATIONS, LESSONS, PERSPECTIVES,  
RECOMMENDATIONS, CONCLUSIONS AND PROPOSALS DRAWN  
FROM THE PRESENTATIONS, STATEMENTS, WORKING PAPERS  
AND INTERVENTIONS ON THE TOPICS UNDER DISCUSSION  
AT THE MEETING

**Agenda Item 5: National, regional and international measures to improve biosafety and biosecurity, including laboratory safety and security of pathogens and toxins.**

Delegation <sup>1</sup>	Text	Source
Cuba (on behalf of NAM)	Biosafety... is the set of practices and technologies aimed at protecting people from the hazards of occupational exposures to pathogens and toxins... Biosecurity is... related to the measures taken to guarantee the protection of the biological material, technologies and information from loss, theft, misuse, diversion and intentional release.	Statement 18/08/2008
France (on behalf of EU)	Issues relating to biological security, in other words the principles, technologies and practices established to prevent unintentional exposure to biological agents and toxins or their accidental discharge, and issues related to biosafety, in other words protections, controls and traceability of biological substances employed to prevent unauthorized access to these substances, their loss or threat, malevolent use or abuse, are two complementary axes intended to minimize the risks and challenges arising for the Convention.	Statement 18/08/2008
OECD	"Biosecurity": Institutional and personal security measures and procedures designed to prevent the loss, theft, misuse, diversion or intentional release of pathogens, or parts of them, and toxin-producing organisms, as well as such toxins that are held, transferred and/or supplied by Biological Resource Centres.	Presentation 19/08/2008
South Africa	Laboratory biosafety describes the containment principles, technologies and practices that are implemented to prevent the unintentional exposure to pathogens and toxins, or their accidental release... Laboratory biosecurity describes the protection, control and accountability for valuable biological materials within laboratories, in order to prevent their unauthorized access, loss, theft, misuse, diversion or intentional release	Presentation 19/08/2008
ABSA	Biological safety (or biosafety) includes specialized practices, procedures and proper use of equipment and facilities, in order to assure the safe handling and disposal of infectious organism or biological material which may harbour infectious organisms. It includes the safe management of recombinant DNA (rDNA) activities... Biosecurity is a growing discipline that leverages and	Presentation 20/08/2008

<sup>1</sup> Please refer to the list of abbreviations at the end of this annex.

	institutes biosafety programs and professionals, and fuses physical security practices and technology to safeguard biohazardous materials such as microorganisms and toxins.	
United Kingdom	"Biosafety" is a term used to refer to the appropriate containment of pathogens in the laboratory environment, both to prevent exposure of workers within the laboratory, and exposure of people, animals and other vulnerable organisms in the external environment. "Biosecurity" in this context is used to refer to the secure storage and use of dangerous pathogens and toxins to reduce the risk of malicious use.	WP.6
Canada <sup>2</sup>	Biosafety describes the containment principles, technologies and practices that are implemented to prevent the unintentional exposure to pathogens and toxins, or their accidental release... Laboratory Biosecurity describes the protection, control and accountability for valuable biological materials within laboratories, in order to prevent their unauthorised access, loss, theft, misuse, diversion or intentional release.	WP.17
China	Biosafety correlates to the obligation under the Convention to ensure that physical protection measures are taken, which prevent the accidental release of pathogenic microorganisms and strengthen personal protection, with a view to protecting population and the environment. In the setting of the Convention, biosecurity is commonly used to refer to security and oversight mechanism of pathogenic microorganisms and relevant resources, to prevent unauthorized acquisition, retention, use, transportation or deliberate release of these materials and bioterrorism activities.	WP.18
Japan	Biosafety - is understood as measures taken for the safety of personnel handling pathogens and toxins and of others in the laboratory, including accident prevention, as well as for preventing the contamination of people and the environment outside the laboratory through the leakage of pathogens and toxins. In ensuring biosafety, the approach of safety management is employed.... Biosecurity - is understood as measures taken for preventing the illicit development, acquisition and use of pathogens and toxins and relevant information and technology for purposes that run counter to the aims of the BWC. In ensuring biosecurity, the approaches of non-proliferation and counter-terrorism are employed	WP.22
Australia	Biosecurity comprises measures that minimize the possibility of biological agents being deliberately used to cause harm. This distinguishes it from biosafety, which involves measures aimed at protecting people and the environment from unintentional impact of biological agents, and includes workplace health and safety issues and the prevention of the accidental release of such agents. The Biological Weapons Convention performs an important role	WP.26

<sup>2</sup> In consultation with Japan, Australia, Canada, Republic of Korea, Switzerland, Norway and New Zealand (JACKSNNZ)

	in addressing bioterrorism threats, by obliging States Parties to strengthen national biosafety and biosecurity measures. An effective regulatory system, supported by communication and education strategies are important measures to improve security of biological agents.	
Brazil	Biosafety is ... the safety condition achieved through a series of actions designed to prevent, control, reduce or eliminate risks inherent to activities that may be hazardous to the health of humans, animals, plants and to the environment	WP.28
Brazil	In regard to... biosecurity, Brazil agrees with the priority, given within the BWC, to both biosecurity in public health settings (which concerns "the protection of microbiological assets from theft, loss or diversion, which could lead to the inappropriate use of these agents to cause public health harm") and "Laboratory biosecurity" (as meaning "the protection, control and accountability for valuable biological materials within laboratories, in order to prevent their unauthorized access, loss, theft, misuse, diversion or intentional release"). It is necessary, however, that other aspects of biosecurity are also taken into account.	WP.28
Brazil	Among others, Brazil also deems relevant the analysis of biosecurity related to veterinary and agricultural fields (denoting "protecting biological resources from foreign or invasive species"). The lack of this type of biosecurity could lead, by means of criminal insertion of such foreign and/or invasive species, to the intentional destruction of crops and/or livestock, with deleterious effects not only to the economy but also – and most importantly – to food security around the globe. These concerns are related to the concepts of bioterrorism and biopiracy, which are also of relevance to the BWC. It is the Brazilian view, therefore, that the excessive narrowing of the definition of biosecurity should be avoided.	WP.28
Cuba	Este documento define la Seguridad Biológica como “Conjunto de medidas científico–organizativas, entre las cuáles se encuentran las humanas, y técnico–ingenieras que incluyen las físicas, destinadas a proteger al trabajador de la instalación, a la comunidad y al medio ambiente de los riesgos que entraña el trabajo con agentes biológicos o la liberación de organismos al medio ambiente ya sean estos modificados genéticamente o exóticos; disminuir al mínimo los efectos que se puedan presentar y eliminar rápidamente sus posibles consecuencias en caso de contaminación, efectos adversos, escapes o pérdidas”.	WP.29
Cuba	Cuba cuenta con normas jurídicas de alto rango destinadas a proteger las personas y bienes de las instituciones frente a peligros diversos. En tal sentido, el Decreto Ley No. 186/1998, sobre el Sistema de Seguridad y Protección Física, define este sistema como “conjunto de medidas organizativas y de control, personal y medios de seguridad y protección, destinados a	WP.29

	garantizar la integridad y custodia de las personas, bienes y recursos ante posibles amenazas de diversa índole”.	
China	States Parties should take effective measures in the following areas: to strengthen laboratory protective measures and prevent unauthorized access to facilities with high risks; to reinforce management of pathogenic organisms; to establish accreditation system on the qualifications and capabilities of organizations and individuals engaged in biological research and development activities; to carry out risk assessments on the research of the life sciences	Statement 18/08/2008
Cuba (on behalf of NAM)	Relevant national authorities should have the responsibility in defining and implementing such concepts, in accordance with relevant national laws, regulation and policies, consistent with the provisions of the Convention.	Statement 18/08/2008
Cuba (on behalf of NAM)	Particular importance of strengthening the Convention through multilateral negotiations for a legally binding Protocol and universal adherence to the Convention.	Statement 18/08/2008
Cuba (on behalf of NAM)	The Convention on Biological and Toxin Weapons forms a whole and that, although it is possible to consider certain aspects separately, it is critical to deal with all of the issues interrelated to this Convention in a balanced and comprehensive manner.	Statement 18/08/2008
Cuba (on behalf of NAM)	There is a greater necessity and urgency for the States Parties to the BWC to work towards strengthening and improving the effectiveness and implementation of this Convention so that together we can fully address the concern about the potential use and/or threats of use of biological agents and toxins as an instrument of war and terror.	Statement 18/08/2008
Cuba (on behalf of NAM)	While some International Organisations, for instance the World Health Organisation (WHO), deal with biosafety and biosecurity issues, the adoption of decisions and recommendation of this matter within the framework of the BWC belong exclusively to the States Parties of the Convention.	Statement 18/08/2008
Iran (Islamic Republic of)	Biosecurity and biosafety should not serve as a pretext to hamper peaceful international cooperation enshrined in Article X of the Convention and thus leading to an unbalanced implementation of the provisions of the Convention or to unduly tightening national export controls. In fact implementation of Article X can contribute, <i>inter alia</i> , to realization of necessary standards for biosafety and biosecurity in each State Party.	Statement 18/08/2008
Japan	There is an urgent need for taking appropriate measures not only for biosafety but also for biosecurity to prevent the development, acquisition and use of biological weapons.	Statement 18/08/2008
Japan	The involvement of all stakeholders, including the relevant international organizations, NGOs, the scientific community, industry, and academia is vital	Statement 18/08/2008
OIE	Effective biosafety and biosecurity in animal health laboratories is of great importance to global disease security. OIE and FAO	Statement 18/08/2008

	provide guidelines on biosafety and biosecurity in close cooperation and sharing a common approach with WHO. OIE sets standards, accepted by WTO as the reference international sanitary rules for animal health laboratory testing, for biosafety and biosecurity of veterinary microbiology laboratories and animal facilities and rules that Members can use to protect themselves from the introduction of diseases and pathogens via trade without setting up unjustified sanitary barriers.	
OECD	Key Elements [include]: designated biosecurity officer...; assessing the risk (potential for malicious misuse × virulence)...; risk management practices: concrete measures to secure the pathogens in a collection (including transport).	Presentation 19/08/2008
Pakistan	A reliable biosafety-biosecurity system would have the elements of preparedness and response in the event of deliberate or accidental releases, and an effective disease surveillance mechanism at the national, regional and international levels.	Statement 18/08/2008
Pakistan	For a reliable and resilient biosafety and biosecurity regime, all stakeholders should be involved. These include governments, industry, life scientists, civil society, and international organizations, in particular WHO, FAO, OIE, OPCW, INTERPOL and UNESCO.	Statement 18/08/2008
Pakistan	As we take these [biosafety and biosecurity] measures, we are required to review their effectiveness and update lists of agents and equipment relevant to safety, security and transfer regimes.	Statement 18/08/2008
Argentina	Biosafety tools are mandatory for peaceful use of biological materials	Statement 19/08/2008
Denmark	Insufficient biosecurity should be addressed with physical security measures, personnel security, material control and accountability as well as transport and information security	Statement 19/08/2008
Denmark	Even the wealthiest states cannot handle biological threats with national means: international cooperation can greatly add value	Presentation 19/08/2008
Indonesia	There is also a need to increase biosafety and biosecurity not only by strengthening physical structures, but also to increase understanding, coordination, and partnership of relevant actors, as well as enacting national legislation.	Statement 19/08/2008
Indonesia	Regional cooperation... could serve as an important bridge between national and international efforts to strengthen BWC. It also serves as a forum to build networks between stakeholders as well as to better understand and foster cooperation among countries in a region.	Statement 19/08/2008
Morocco	Biosecurity and biosafety strategy will require the establishment of a steering committee at both regional and national levels; the committee will be responsible for strategic leadership for development, implementation and oversight.	Presentation 19/08/2008
Morocco	Recommendations have to be made at an international level, given single governmental actions are not enough inside the frame of globalization of science.	Presentation 19/08/2008

Morocco	It is desirable to set-up international standards in the field of biosafety and biosecurity that take into consideration freedom of mobility for scientists, dignity and cultural pluralism.	Presentation 19/08/2008
Nigeria	There is a need for global cooperation in the area of biological safety and biosecurity since the rapid expansion of biotechnology research has resulted in the global proliferation of dual-use materials, technologies and expertise.	Statement 19/08/2008
Nigeria	Laboratory biosecurity and biosafety often overlap and should complement each other.	Statement 19/08/2008
Norway	International standards should help ensure that facilities are well prepared to respond in the event that biological agents were released.	Presentation 19/08/2008
Norway	Biosafety and biosecurity are closely interlinked, and common systems are required to manage both effectively.	Presentation 19/08/2008
Norway	International standards play a vital role in the development of national regulations, guidelines and requirements.	Presentation 19/08/2008
Norway	External and independent certification may assist containment laboratories in establishing and implementing adequate level of biosafety and biosecurity.	Presentation 19/08/2008
Norway	Certified compliance with relevant international standards may confirm that appropriate measures are taken with regards to biorisk management.	Presentation 19/08/2008
Pakistan	The scope of biosecurity should include select agents, equipment, transport, risk management, supervision, oversight and review.	Statement 19/08/2008
Pakistan	Possession, use and transfer of specific biological agents should be guarded; high security and containment must be maintained.	Presentation 19/08/2008
South Africa	Laboratory biosafety should be the foundation for biosafety and biosecurity.	Presentation 19/08/2008
South Africa	Biosafety concepts include: access control, procedures, personal protection, safe working procedures, lab management, personnel capabilities, structural requirements, equipment, agent transport.	Presentation 19/08/2008
South Africa	Biosecurity concepts include: access control, procedures, accountability, control, personnel security, structural requirements, equipment, agent transport.	Presentation 19/08/2008
South Africa	[There is a need for a] concerted effort to first improve biosafety standards and then improve biosecurity.	Presentation 19/08/2008
Switzerland	Three main components to ensure that these issues are addressed and properly managed in biorisk facilities: 1) biosafety officers with sufficient knowledge and skills, 2) good microbiological technology, 3) a biorisk management system.	Statement 19/08/2008
Switzerland	Switzerland recommends a compulsory or certified curriculum and the associated training programmes for biosafety officers.	Statement 19/08/2008
Ukraine	Most countries have collections of naturally or artificially created microorganisms or other biological agents or toxins to be used for protective or other peaceful purposes. All necessary means have to be implemented for the safeguard and control of such	Statement 19/08/2008

	collections for them not to be used for deliberate or nonintentional hostile purposes.	
United Kingdom	A single regulatory framework should govern work with human and animal pathogens.	Statement 19/08/2008 and WP.7
United Kingdom	A common set of containment measures should apply to both animal and human pathogens.	Statement 19/08/2008 and WP.7
United Kingdom	Senior managers should regularly review safety and security measures, ensure that all staff are trained in safety and security practices and ensure that there is scrupulous adherence to the relevant procedures.	Statement 20/08/2008 and WP.6
United Kingdom	It is particularly important to avoid conflicts of interest between the regulators of (animal pathogen) facilities and the funder(s) of (animal pathogens) research and diagnostics.	Statement 19/08/2008 and WP.7
United Kingdom	Should seek to develop a framework that is legally feasible and practicable; that is understood by facility personnel; and such that regulations can be enforced by the regulator.	Statement 19/08/2008 and WP.7
United Kingdom	It is important to engage the relevant stakeholder communities and to develop a plan to communicate the changes to the regulatory framework.	Statement 19/08/2008 and WP.7
WHO	The way forward includes: advocacy/ awareness for development of national policy and allocation of resources, technical support, training, national and institutional policy and independent review/appraisal.	Statement 19/08/2008
WHO	Next steps include: support countries to enhance laboratory biosafety, strengthen biosafety and laboratory biosecurity in the regions, train trainers, and discuss introduction of biosafety as a scientific discipline into undergraduate/ graduate studies	Statement 19/08/2008
ABSA	A mix of voluntary compliance and performance-based regulations are likely to provide the highest level of biosecurity.	Presentation 20/08/2008
ABSA	BSL1 and 2 laboratories are low risk. Regulations will have significant impact on research, with little significant gain in protection.	Presentation 20/08/2008
ABSA	Key components assessed by an effective accreditation program would include: 1) the biosafety expertise and training of personnel managing and conducting research; 2) the adequacy and function of the biosafety management structure supporting its research activities; and 3) the adequacy and function of biocontainment measures, including facilities, equipment, practices and record-keeping systems, in place at the facility that is evaluated.	Presentation 20/08/2008
Canada	Encourage pooling of resources / comparison of work practices and experiences	Presentation 20/08/2008
A-PBA	The issues of biosafety and biosecurity have evolved to different positions for different countries and regions. In many developing countries, the focus could still be on the fundamentals of biosafety.	Presentation 20/08/2008

A-PBA	To implement a systematic programme for biosafety and biosecurity that is effective and sustainable , a certain infrastructure at the regional level has to be in place to support and implement those programmes.	Presentation 20/08/2008
A-PBA	[These is a need to] support a Global (International ) Biosafety and Biosecurity Framework; encourage the development of National Biosafety and Biosecurity Framework; encourage the formation of National Biosafety Association / Biosafety Work Groups; provide a common platform for training, networking and promotion of biosafety and biosecurity	Presentation 20/08/2008
France	Should trace and standardize research activities in laboratory notebooks.	Statement 20/08/2008
INES	Licensing includes not only facilities in which the work is being conducted, but also the work itself and the principal investigators that are responsible for conducting the projects. The licensing process, if proper instruction to principal investigators about dual-use aspects of life sciences work is included, can go a long way not only towards minimizing risks but also in raising risk awareness among scientists and engineers carrying out the work.	Statement 20/08/2008
INES	Licensing and oversight of activities are all part and parcel of an effective biosecurity regime to benefit us all.	Statement 20/08/2008
INES	An important move towards meeting the challenges posed by the risks emerging from the life sciences revolution would be the international harmonization of basic biosecurity and oversight regulations.	Statement 20/08/2008
INES	Reaching agreement on a set of basic international biosecurity and oversight regulations that can be presented as a negotiating package for consideration at the Seventh Review Conference in 2011.	Statement 20/08/2008
Iran (Islamic Republic of)	Biosafety and biosecurity procedures and practices vary enormously from country to country according to level of technological development and access to technology and materials as well as geological and climatic conditions that may affect the laboratory design and thus the requirements. Therefore a "one size fits all" approach should be avoided in dealing with the issue.	Statement 18/08/2008
IUBMB	Ensure that the benefits of the life sciences are maximized while their risks are minimized.	Presentation 20/08/2008
Japan	Outreach and information sharing through blog sites can contribute to raise awareness on biosecurity issues.	Statement 20/08/2008
Malaysia	[There is a need for] technical advisory boards and the establishment of Bio-safety and Bio-security officers.	Statement 20/08/2008
Norway	Level 3 laboratories should have adequate control, including ongoing operating costs and maintenance. Worker infection and environmental release need to be prevented within the laboratory. Best practices should be tailored locally and should be shared. Regulators are key actors in the process.	Presentation 20/08/2008

France	Specific biological guidelines are necessary to strengthen legal standards	Presentation 21/08/2008
United States	"Dual use" potential of certain life sciences research requires consideration of biosecurity measures.	Presentation 21/08/2008
United States	Effective implementation of laboratory biosecurity practices requires the commitment of institutional management.	WP.1
United Kingdom	The basis of good physical security is founded on the "3D principle" – Deter, Detect and Delay: <u>Deter</u> – the overt physical and electronic security measures that may provide a serious deterrent to a would-be intruder; <u>Detect</u> – alarm systems and cameras to detect the presence of an intruder; and, <u>Delay</u> – physical security measures that delay the intruder for a sufficient period to allow a response force to attend.	WP.6
United Kingdom	The security procedures required for individual laboratories depend upon the nature of the organism being handled.	WP.06
Germany	[There is a need for] registration, licensing and supervision of both facilities and persons.	WP.14
Germany	Any person to be entrusted with a security-sensitive activity must undergo prior security vetting.	WP.15
Germany (on behalf of EU)	[Biosafety & biosecurity includes:] measures for safe/secure production, use and/or storage; measures for safe/secure transport; licensing/registration of facilities/persons handling biological materials; reliability/security check of personnel; regulations for genetic engineering work; control of importation and exports.	WP.16
Canada <sup>3</sup>	The following elements are proposed: (i) Introduction of a full interdepartmental community including departments that lead on international obligations, as well as those departments that lead on domestic implementation; (ii) National standards or guidelines that describe appropriate: laboratory biosafety (worker safety), biocontainment (containment of infectious agents), and biosecurity (securing infectious agents); (iii) Training and certification for biosafety officers; (iv) Transportation of dangerous goods requirements that allow for shipping of infectious substances in a secure and contained fashion, both within and outside a state party's borders. Proper outreach on international obligations and how they translate into domestic responsibilities.	WP.17
Canada <sup>3</sup>	The BTWC requires enforcement, health agencies and defence to work together at all times. A proper framework needs to be established, with a clear understanding of the mandates of each and every participating department or agency. (i) First step is outlining existing mandate and work currently undertaken by each department in the biological world. (ii) Second step is to outline all legislation currently enforced – the use of relevant	WP.17

<sup>3</sup> In consultation with Japan, Australia, Canada, Republic of Korea, Switzerland, Norway and New Zealand (JACKSNNZ)

	resources, including the 1540 Matrix, would be very useful for this exercise. (iii) Third step is to establish an interdepartmental bio-working group. Once established, an early priority is an agreed strategy on the best outreach tools. Awareness-raising on international obligations and domestic obligations are a government's responsibility. Education and awareness-raising is a key step.	
China	[Biosafety and biosecurity] supplement and improve each other and should be enhanced at the same time.	WP.18
China	[Biosafety & biosecurity include:] Laboratory Biosafety and Biosecurity; Personnel Protection and Biosecurity Measures; Control of Pathogenic Microorganisms; Emergency Response System.	WP.18
China	Establish or improve laboratory standardized biosafety practice and strengthen laboratory protective measures with a view to preventing the accidental release of pathogenic microorganisms. Implement licensing approval on the access to facilities with high risks so as to prevent unauthorized access.	WP.18
China	Reinforce security measures and management in the storage, wrapping, transportation and transfer of pathogenic microorganisms.	WP.18
China	Organizations and individuals engaged in biological research and development activities which have high risks in biosecurity aspect should be accredited according to the evaluation of their qualifications and capabilities.	WP.18
China	Organizations and individuals engaged in biological research and development activities which have high risks in biosecurity should be accredited according to the evaluation of their qualifications and capabilities.	WP.19
Indonesia and Norway	Capabilities must be adapted to local needs, taking into account the complexities involved in setting up new laboratories, as well as the challenges associated with construction, on-going maintenance and running costs.	WP.20
Indonesia and Norway	External certification and audit would improve safety and security standards.	WP.20
Indonesia and Norway	The human element is the crucial part of the chain for many aspects of biosafety and biosecurity: good facilities and procedures are not sufficient if personnel are not adequately trained and do not clearly understand their roles and responsibilities.	WP.20
Indonesia and Norway	A number of actors have important roles in promoting biological safety and security: governments, professional organisations, research institutions, international organisations, and international networks such as regional biological safety associations. Partnerships are encouraged.	WP.20
Indonesia and Norway	Need to address the challenges posed by transport of dangerous material, including the ability to safely, securely and cost effectively ship samples and cultures by air.	WP.20

Indonesia and Norway	Fully implementing the obligations set by the BTWC and the UN Security Council resolution 1540 is an essential component in providing biosafety and biosecurity.	WP.20
Japan	The highest level of safety needs to be ensured in the handling of pathogens and toxins for accident prevention, and to date measures have been taken for this purpose.	WP.22
Japan	It has become crucial to strengthen security measures for the prevention of the development, acquisition and use of biological weapons.	WP.22
Japan	Biosafety and biosecurity differ in their approach, there are quite a few common measures in their implementation. Particularly, in order to ensure biosecurity, first and foremost, it is required to take solid measures for biosafety.	WP.22
Japan	National measures, as well as regional and international actions, for biosafety and biosecurity is important.	WP.22
Japan	Regulations for risk management: (1) Control of pathogens and toxins - Since there is a risk of dangerous pathogens and toxins being directly employed for illicit purposes, their possession should be controlled strictly. For conducting controls, a list of such agents needs to be compiled in order to clarify which pathogens and toxins should be regulated. Further, in addition to the control of dangerous pathogens and toxins in the laboratory, appropriate control of their transport is necessary. Accordingly, to ensure appropriate control of pathogens and toxins, legal regulations including proper penal legislation should be taken. (2) Monitoring system - To make the appropriate control of pathogens and toxins effective, monitoring whether facilities that possess such agents are taking adequate measures is important. (3) Import-Export Controls - Controls on the import and export of pathogens and toxins should be considered as key measures from the viewpoints of both biosafety and biosecurity	WP.22
Japan	Biosecurity manuals have yet to be adopted in many places and there is still significant room for improvement.	WP.22
Japan	Personnel handling pathogens and toxins are required to acquire accurate knowledge and skills and to properly control such biological agents for biosafety and biosecurity purposes. Accordingly, the provision of education and training for appropriate workers is also an important measure.	WP.22
Japan	As the potential effects of inadequate biosafety and biosecurity measures could spread beyond national boundaries, regional and international cooperation is indispensable.	WP.22
Japan	Strengthen coordination with relevant international organizations, such as the WHO, as well as to engage in mutual feedback on the discussions concerning biosafety and biosecurity.	WP.22
Japan	Hold biosafety and biosecurity workshops and seminars, since they contribute to the enhancement of awareness and capacity building of stakeholders in countries that have not taken adequate safety measures. In particular, since the consequences of	WP.22

	accidents and terrorism involving biological agents have a high risk of spreading regionally, the convening of workshops to consider regional responses would be beneficial.	
Japan	Not only coordination amongst governments, but also the establishment of researcher networks would facilitate and expedite information sharing, and thus should be promoted actively. Moreover, the meetings of international organizations and organizations for regional cooperation and relevant workshops and seminars could also serve as opportunities for developing researcher networks.	WP.22
United States	The concept of laboratory biosafety and biosecurity at an international level is still in its infancy, and the international community faces many challenges in achieving comprehensive implementation in this area. Hurdles range from a lack of capacity or necessary financial resources in many regions to operational and oversight laxity, personnel liability, and an overall low-level of awareness or concern.	WP.23
United States	To reduce the biological risks associated with infectious disease laboratories, complementary and coordinated international measures are critical.	WP.23
United States	Much work remains for states to establish necessary oversight of facilities holding dangerous pathogens and for the international community to increase its cooperative efforts to promote security of such facilities wherever they are located.	WP.24
United States	Outreach and education are among the most effective tools for promoting responsible research and enhancing biosafety and biosecurity.	WP.25
France (on behalf of EU)	The EU supports capacity building in third states to ensure the safety and security of microbial or other agents or toxins in laboratories and other facilities, including during transportation, in order to prevent unauthorized access to and removal of such agents and toxins.	WP.27
France (on behalf of EU)	Promote: networking among all national stakeholders, including the public health sector, justice, police, foreign affairs, and other relevant sectors; the involvement of relevant international and regional organizations; the membership of countries; stakeholders in regional professional biosecurity and biosafety associations; networking, especially in the regional context, among reference laboratories to promote transparency and to build confidence.	WP.27
Brazil	Identify and analyze the potential occurrence of any commercial activity that might be considered illegal and/or prohibited under the international mechanisms that regulate transfers (exports or imports) of sensitive products or controlled technologies.	WP.28
Brazil	Publish and publicize the lists of sensitive goods.	WP.28
Brazil	Efforts towards biosafety and biosecurity should include training programs and initiatives to promote dialogue between the private sector and the government. A successful program could include technical visits to industries and state-owned companies whose	WP.28

	activities are related to sensitive, dual-use assets and technologies.	
Brazil	The involvement of operators in the control process raises awareness and favours the creation of a mindset focused on the adequate handling of sensitive goods, which is of particular importance in the case of biological agents that can be easily obtained. Such awareness is essential to the effectiveness of biosecurity strategies.	WP.28
Brazil	Help identify any implications of exports or imports in areas of concern.	WP.28
Norway	International standards also play a vital role in the development of national regulations, guidelines and requirements. External and independent certification may assist containment laboratories in establishing and implementing adequate levels of biosafety and biosecurity. Certified compliance with relevant international standards may, moreover, confirm that appropriate measures are taken with regards to biorisk management.	WP.34
Norway	Relevant management systems need not only cover the more traditional technically oriented areas such as facility design or personal protective equipment, but also consider human and organizational factors.	WP.34
India	Discussions on biosecurity and biosafety as well as oversight, education, awareness raising and adoption and/or development of codes of conduct are welcome with the aim of preventing misuse in the context of advances in bioscience, technology research with the potential use for purposes prohibited by the Convention.	In-room paper
India	Our discussions should be aimed at helping States Parties improve their national standards in the fields of biosafety and biosecurity and should be implemented on national and voluntary basis.	In-room paper
India	Achieving such standards in the fields of biosafety and biosecurity can be facilitated by international cooperation and strengthening the implementation of Article X of the Convention.	In-room paper
India	Any regulation that is developed in the context of biosafety which has the potential to hamper international collaborative ventures should be carefully debated to ensure that they are not detrimental to the progress of science and the application of the benefits of science to humanity.	In-room paper

Cuba (on behalf of NAM)	Promote international cooperation for peaceful purposes, including scientific-technical exchange.	Statement 18/08/2008
Cuba (on behalf of NAM)	Achieving necessary standards in the fields of biosafety and biosecurity requires and is facilitated by international cooperation and strengthening of Article X of the Convention.	Statement 18/08/2008
OIE	OIE and FAO highlight that animal pathogens are a risk to both animal and human health (60% of human diseases are zoonotic). The most effective way of preventing bioterrorism using animal	Statement 18/08/2008

	pathogens is to strengthen the ability and capacity of the national Veterinary Services of countries to early detect, diagnose and respond to incidental or deliberate disease incursions within the guidelines, recommendations and international standards of the OIE that are mandated by the World Trade Organisation (WTO).	
OIE	Laboratory capacity building plays an important part in ensuring adequate biosafety and biosecurity, particularly in areas where there is currently a lack of expertise. OIE and FAO support specific laboratory capacity building programmes.	Statement 18/08/2008
Bulgaria	It is important to create an early warning system for intended and unintended communicable diseases through collaboration with other countries and to harmonize our legislation and regulatory national documents with those of larger regional bodies.	Statement 19/08/2008
Indonesia	[There is a need for] individual countries to further enhance... capabilities in addressing challenges such as emerging and re-emerging diseases which affect human, animal, and plants. These efforts to enhance capabilities must be adapted to local needs.	Statement 19/08/2008
Canada	Facilitate communication between biosafety professionals and nurture networking. Develop and share training programmes.	Presentation 20/08/2008
A-PBA	Identify or establish such partners or channels that can assist in the implementation of [biosafety and biosecurity] programmes.	Presentation 20/08/2008
Indonesia	BSL 3 facilities need to be more widely available. Building quality, maintenance and levels of expertise need special attention.	Statement 20/08/2008
Malaysia	Encourage State Parties who are in the position to do so to extend such assistance to other States Parties who need it	Statement 20/08/2008
Nigeria	Ad-hoc capacity building is too passive. Capacity building in curriculum development for primary, secondary and tertiary education is critical.	Statement 20/08/2008
Nigeria	Researchers and laboratory technologists require capacity building and refresher courses in maintaining laboratory safety measures. It is important to provide training to technical personnel. Emphasis should be placed on long-term sustainability of training; trainees must be selected carefully to ensure this sustainability.	Statement 20/08/2008
Nigeria	Need to have capacity building on information dissemination as well as effective public awareness strategies for biosafety and biosecurity.	Statement 20/08/2008
Nigeria	To effectively entrench an issue in a system, it has to be taught. Make capacity building in curriculum development and mainstreaming biosafety and biosecurity in the curricula of ... basic, post-basic and tertiary education critical.	Statement 20/08/2008
Sudan	Would like to support adequate training and promotion of peaceful use of biotechnology.	Statement 20/08/2008
Turkey	Legislative work, education and awareness raising, the improvement of analysis-laboratory capacities and the acquisition of new materials are important.	Statement 20/08/2008

1540 Committee	States are required to adopt and reinforce laws which prohibit non-state actors to manufacture, acquire, possess, develop, transport, transfer or use biological weapons; and to prevent illicit trafficking of related materials through measures in accounting / security, physical protection, border and export controls. Countries need cooperation between government agencies, including those not traditionally involved in arms control.	Presentation 20/08/2008
1540 Committee	Countries are encouraged through UNSCR 1810 (2008) to submit action plans to the 1540 Committee as well as requests and offers of assistance.	Presentation 20/08/2008
WHO	Support laboratory infrastructure and capacity building for research.	Presentation 21/08/2008
WHO	Facilitate local and regional networking.	Presentation 21/08/2008
WHO	Create mechanisms for sharing information on life science research programmes and findings.	Presentation 21/08/2008
WHO	Provide tools and support in such a way that they can be tailored to help countries to develop or strengthen research policies and strategies and related laws according to their needs and priorities.	Presentation 21/08/2008
Georgia	All conferences that bring together specialists from countries working in the same field are very productive for capacity building.	Statement 22/08/2008
Pakistan	Capacity building in biosafety and biosecurity is important component of the process	Presentation 22/08/2008
China	One of the purposes for exchanges and cooperation is to provide assistance and support to the countries which are in need.	WP.18
China	States Parties should further improve their biosafety and biosecurity systems and relevant capacity building, assuring pathogenic microorganisms and toxins be used for peaceful purposes not prohibited by the Convention, and not be used for biological weapon or bioterrorism purposes.	WP.18
OIE	OIE and FAO support the use of risk management frameworks as a tool to contribute to decision making. Risk management frameworks must be flexible so that a range of developed and developing countries can apply them. The OIE has developed and published in the Terrestrial Animal Health Code international standards for conducting import risk analysis and guidelines on the methodology for risk assessments. A detailed manual has also been published by OIE to assist countries to conduct either qualitative or quantitative risk assessments.	Statement 18/08/2008
OIE	Risk assessments may not be the only factor informing the decision making process and it must be acknowledged that zero risk is often unachievable, leaving a decision to be made on the level of acceptable risk to achieve an appropriate level of sanitary protection for animal and human health for the importing country.	Statement 18/08/2008
Pakistan	Biosecurity and biosafety are not confined to physical security of laboratories, pathogens and toxins. They encompass risk	Statement 18/08/2008

	awareness, measures to ensure that life sciences are committed to their benign use, and protection of know-how and technology against bioterrorism and biological warfare.	
OECD	Elements of risk management: (i) people [including,] security management of personnel, security management of visitors, incident response plan, staff training and developing a biosecurity-conscious culture; (ii) material [including,] material control and accountability, supply of material, transport security; (iii) information [including,] security of information.	Presentation 19/08/2008
OECD	Recommend international policy discussion about (the) broader spectrum of risks emanating from advances in life sciences and (aims) to describe a process and set of organizing principles by which risk associated with the malevolent use of technological advances might be managed in the longer term.	Statement 19/08/2008
United Kingdom	A highly accountable regulatory framework that is consistent, transparent, proportionate and targeted on activities where the greatest risks are should be developed.	Statement 19/08/2008 and WP.7
United Kingdom	Risk assessment should be a key element of such a regulatory framework.	Statement 19/08/2008 and WP.7
Cuba	Recommend a scientific risk appraisal system for pathogens and GMOs.	Statement 20/08/2008
INES	Because of the leading role that engineers and scientists play in the development of science and technology, it is essential that they themselves be directly involved in this process of risk management.	Statement 20/08/2008
Cameroon	Risk assessment must guarantee human, vegetal and animal security, as well as the protection of environment.	Presentation 21/08/08 AM
Cameroon	Risk assessment must taken into account the precautionary principle, and guidelines set by international organizations.	Presentation 21/08/08 AM
France	A good assessment of risks is essential for a good risk management, as well as the subsequent quality management system (overall traceability and competence of the staff).	Presentation 21/08/2008
France	Without risk assessment and quality management systems, no security for biological field	Presentation 21/08/2008
United States	Many laboratories are unsure how to conduct risk assessments and resources and guidance for doing so are limited.	WP.1
United Kingdom	Risk assessment should be a key element.	WP.7
China	Carry out risk assessments on the research of life sciences and reduce the risks of abusing the achievements in this field.	WP.18
France (on behalf of EU)	The EU promotes bio-risk reduction practices and awareness, including biosafety, biosecurity, bio-ethics and preparedness against intentional misuse of biological agents ad toxins, through international cooperation and networking in this area.	WP.27

**Agenda Item 6: Oversight, education, awareness raising, and adoption and/or development of codes of conduct with the aim of preventing misuse in the context of advances in bio-science and bio-technology research with the potential of use for purposes prohibited by the Convention.**

<b>Delegation<sup>4</sup></b>	<b>Text</b>	<b>Source</b>
China	States Parties should also promote international cooperation, including making full use of the resources and achievements of relevant international organizations with a view to improving the national oversight system of the life sciences. Meanwhile, the competent countries are encouraged to provide assistance to the countries which are in need.	Statement 18/08/2008
Cuba (on behalf of NAM)	The possibility of any use of bacteriological (biological) agents and toxins as weapons should be completely excluded, and the conviction that such use would be repugnant to the consciousness of humankind.	Statement 18/08/2008
France (on behalf of EU)	The potential for abuse of technological developments in the field of life sciences, as well as the risk of developmental use of a biological weapon by a state or a terrorist organization are major challenges for the international community and require both ongoing adaptation of tools and a strengthening of the sharing of experience among States Parties.	Statement 18/08/2008
Iran (Islamic Republic of)	There is a need to strike a balance between national biosafety and biosecurity and open science research to avoid creating restrictions on the development of scientific research and on publishing the results of such research.	Statement 18/08/2008
Iran (Islamic Republic of)	Relevant actors are to have a clear understanding of the content, purpose and foreseeable consequences of their activities, as well as of the need to abide by the obligations contained in the Convention.	Statement 18/08/2008
Nigeria	The dual-use potential of bio-technology will always remain a minefield, requiring a careful balancing act, so as not to deprive states of the benefits of bio-technology.	Statement 18/08/2008
Pakistan	[It is favourable to have] a healthy combination of government/institutional controls and regulation by scientific establishments and scientists themselves.	Statement 18/08/2008
Pakistan	The objective should be to proscribe the use of the life sciences for malign purposes but not to stifle scientific inquiry and research for beneficial purposes.	Statement 18/08/2008
Pakistan	In pursuing these goals, oversight must respect the principle of proportionality.	Statement 18/08/2008
Pakistan	In pursuing these goals, oversight must... explore the possibility of harmonization at the national and regional levels, through voluntary initiatives.	Statement 18/08/2008

<sup>4</sup> Please refer to the list of abbreviations at the end of this annex.

Nigeria	It is critically important to strike an important balance between protection from dangerous pathogens and toxins and preservation of an environment that promotes legitimate biological research (through organizational cooperation and research).	Statement 19/08/08
Ukraine	[Recommend] establishment of Scientific Advisory Body that could independently analyze global developments and their transparency in connection with the BWC.	Statement 19/08/2008
Ukraine	Risks resulting from progress in modern biology have to be minimized.	Statement 19/08/2008
IAP	Scientists who become aware of activities that violate the Biological and Toxin Weapons Convention or international customary law should raise their concerns with appropriate people, authorities and agencies.	Statement 20/08/2008
INES	Control over the work in both the proposal and execution stages is essential, and this could be carried out both by licensing and by a peer review process of oversight at the institutional level in cooperation with the principal investigator.	Statement 20/08/2008
IUBMB	Prevent any further undermining of public confidence in the life sciences or life scientists.	Presentation 20/08/2008
Brazil	Should be cautious about measures that may cause excessive intervention in research activities... bearing in mind that the need to prevent malign actions has to take into account the need for life saving advancements. All are aware of the importance of the Convention and of the risks that arise from undue use of science. Must not transform the necessary caution, however, into excessive fear that instead of protecting from harm would hamper scientific evolution at a high cost on lives, as new vaccines and treatments could remain undeveloped.	Statement 21/08/2008
Brazil	The first obligation when discussing oversight must be, therefore, to ensure that efforts to mitigate risks are proportionate and do not unduly restrict science for peaceful purposes.	Statement 21/08/2008
Brazil	Exclusively top-down approaches might give enforcers a false sense of security, but they can never be effective if operators are not properly informed and conscious of all the potential results of their actions, as well as of their responsibilities entailed by their researches... [Thus,] the government should be primarily involved in education and awareness raising programs. The need for the protection of resources and scientific supervision must therefore be part of the education of our scientists, making institutional conscience the best path towards effective implementation of the BWC.	Statement 21/08/2008
Brazil	The Brazilian government agrees with the Background Document on the Oversight of Science submitted by the ISU <sup>5</sup> , when it states that, when bottom-up approaches results are achieved, they "are more flexible and better tailored to the demands of the community, are self-sustaining, more easily harmonised, and can	Statement 21/08/2008

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<sup>5</sup> BWC/MSP/2008/MX/INF.3

	be more comprehensive (as every member of the community becomes an agent for enforcement)."	
Brazil	In the broad spectrum of different options for oversight, Brazil favours a combination of institutional and government control, giving institutions and scientists enough space without exempting the government of its responsibility to support and inform researchers.	Statement 21/08/2008
Brazil	Stress dialogue between public and private sector.	Statement 21/08/2008
France	Legislation should improve the rules and the transparency in the relationship between researchers, between researcher and their employers and for bioethical purposes.	Statement 21/08/2008
Germany	Articles should be published freely within the rules of respective journals. Research findings should be shared at home and abroad.	Statement 21/08/2008
NAS	Misuse of dual use research is a serious potential risk for biological weapons and bioterrorism. Need a mix of policies that both enhance security and enable continuing scientific advances.	Presentation 21/08/2008
NAS	Biosafety and laboratory biosecurity are essential elements; best beginning for many countries.	Presentation 21/08/2008
NAS	Need for oversight throughout the life cycle of research – from proposals to publication and dissemination.	Presentation 21/08/2008
NAS	Mix of formal, including legal and regulatory, and informal, including self-policing and guidelines: "web of prevention" most likely to be effective.	Presentation 21/08/2008
NAS	Scientific community has a key role in helping to reduce the risks of misuse. Prefer self-governance by scientific community and guidelines by governments. Important role for "soft law" – norms, codes of ethics, conduct, and practice	Presentation 21/08/2008
NAS	Importance of advice from scientific community in design and implementation of oversight systems. Significant role for scientific organizations at all levels in working with policy-makers.	Presentation 21/08/2008
NAS	Open databases on biological organisms can be a security risk, but biosecurity will be better served by policies that facilitate, not restrict, scientists' access to these databases.	21/08/08 PM
Pakistan	Appropriate national and institutional oversight mechanisms / arrangements as well as guidelines are essential.	Presentation 21/08/2008
Pakistan	Responsibility of oversight needs to be jointly fulfilled by national authorities, scientific programme managers and investigators of life science projects.	Presentation 21/08/2008
Pakistan	National and institutional bodies also need to address issues related to possible misuse or diversion of scientific knowledge, materials or equipment towards biological weapons applications.	Presentation 21/08/2008
Pakistan	National protocols and institutional procedures should be continuously reviewed, updated and properly implemented.	Presentation 21/08/2008
United Kingdom	It is important to review advances regularly and to develop appropriate oversight strategies. This helps ensure the responsible development and application of technologies, and increases	Statement 21/08/2008 and WP.11

	awareness of the implications for the Biological & Toxin Weapons Convention that arise from these developments and applications.	
United Kingdom	[There is a need for] the scientific community to lead in debating the implications of research and engaging early with civil society groups, social scientists and ethicists, and the public. A review of current regulations and guidelines to ensure that an appropriate governance framework was in place before the applications of synthetic biology were realised is also important.	Statement 21/08/2008 and WP.11
United Kingdom	A key issue is the early consideration of a wide range of policy, social and ethical issues in the development of strategies for the control, oversight and governance of emerging technologies and their applications. This enables an appropriate balance between the benefits and risks to be struck. An interdisciplinary approach, involving experts from across government, academia, industry, civil society, social science and ethics is essential to this process.	Statement 21/08/2008 and WP.11
United Kingdom	Reviewing the regulatory framework would be one way of ensuring appropriate oversight and control mechanisms for activities that are of more immediate relevance to the risk of misuse under the BTWC. However, other mechanisms, including education and awareness-raising are also important.	Statement 21/08/2008 and WP.11
United Kingdom	Scientists and physicians can convince themselves that ethical standards no longer apply to their work and that what they are doing is in fact for the common good. If there are no internationally recognised or uniformly applied standards, then this becomes much easier.	Statement 21/08/2008 and WP.10
United Kingdom	Ensuring that life science research is compliant with the BTWC needs to be seen as a collective responsibility including funding bodies, researchers, institutions and publishers.	Statement 21/08/2008 and WP.10
United Kingdom	Clear mechanisms are required for reporting deliberate or inadvertent misuse or misconduct in scientific research; people must have confidence that such systems work and that whistleblowing will be without retribution.	Statement 21/08/2008 and WP.10
United Kingdom	Measures taken in this context should not be seen in isolation: improved biosafety and biosecurity in laboratories, enhanced disease surveillance, effective national implementation of the Convention, improved investigative mechanisms for cases of alleged use and practical oversight of dual-use R&D all have a role to play in strengthening the BTWC.	Statement 21/08/2008 and WP.10
United States	Development of any oversight mechanism for synthetic biology must balance the need to minimize the risk of misuse with the need to ensure that science and innovation are encouraged.	Presentation 21/08/2008
United States	Development of any oversight mechanism must involve engagement of the synthetic nucleic acid industry, the scientific community, and other stakeholders.	Presentation 21/08/2008
United States	Need to minimize the likelihood that biological research findings will be misused for production and enhancement of biological weapons.	Presentation 21/08/2008

United States	Goal: enhance biosecurity protections for life sciences research while ensuring that any impact to the free flow of scientific inquiry is minimized.	Presentation 21/08/2008
United States	The development of any oversight mechanism must balance the need to minimize the risk of misuse with the need to ensure that science, innovation, and trade are encouraged. The process for identifying options for any oversight mechanism for synthetic biology must involve engaging the synthetic nucleic acid industry, the scientific community, and other stakeholders.	WP.4
WHO	Develop, implement and monitor regulation, legislation, guidelines and standard operating procedures for laboratory biosafety, for laboratory biosecurity, and for assessing and managing the risks of dual use life science research.	Presentation 21/08/2008
WHO	Provide adequate financial resources.	Presentation 21/08/2008
Japan <sup>6</sup>	With awareness and appropriate guidance, scientists can apply their own expertise to judge the wider ramifications of their research and other activities.	WP.21
Japan <sup>6</sup>	Safeguards policies and oversight mechanisms that require all scientists to take responsibility for biosafety / biosecurity should be promoted.	WP.21
Japan <sup>6</sup>	All relevant actors must be mindful of their responsibilities. It is necessary to examine appropriate measures involving not only the scientists, who are obviously the principal actors, but also all other stakeholders, including the policy-makers, regulators, administrators of universities and research institutions, together with academic associations and the private sector.	WP.21
Japan <sup>6</sup>	It is important to institute an oversight mechanism which is meaningful and does not create unnecessary burden. This is essential to make it acceptable for scientists and to forge ownership.	WP.21
Japan <sup>6</sup>	Life scientists themselves need to be actively involved in constructing and instituting such oversight mechanisms in order to make them effective.	WP.21
Japan <sup>6</sup>	The following elements need to be included: appropriate management of personnel; appropriate management of pathogens and toxins; appropriate management of sensitive information and knowledge about research information and research outcomes; research funding; and the modalities of governance over research programs in universities, research institutions and academic associations.	WP.21
Japan <sup>6</sup>	It is necessary to institute a legally-binding oversight mechanism over pathogens and toxins.	WP.21
Japan <sup>6</sup>	With regard to the management of research information, knowledge and outcomes, there is a concern that a similar	WP.21

<sup>6</sup> In consultation with Japan, Australia, Canada, Republic of Korea, Switzerland, Norway and New Zealand (JACKSNNZ)

	legally-binding oversight mechanism may not be appropriate since such measures could obstruct scientific development.	
Japan <sup>7</sup>	Involve all relevant stakeholders including scientists and administrators in universities, research institutions and companies, as well as stakeholders in government and the media when appropriate.	WP.21
Japan <sup>7</sup>	Study the establishment of a mechanism that enables scientists to consult on their research and to expand the opportunities where the scientific and security communities can communicate with each other.	WP.21
Japan <sup>7</sup>	It should be encouraged for scientific research institutions to monitor voluntarily, with the help of academic association when necessary, whether research grants are being used for legitimate purposes and whether research projects are properly managed. In this regard, whistleblower systems can be of great importance to support such voluntary monitoring.	WP.21
Japan <sup>7</sup>	It is important to examine how to apply and implement these means appropriately through national and international cooperation and coordination, in order not to hinder the development of science and technology ... but to protect the scientific activities of well-intentioned scientists.	WP.21
United States	It is difficult to objectively quantify the dual-use risk of an experiment or project. Scientists would benefit from 1) increased awareness of dual-use issues, and 2) simple tools and guidelines that could help in an objective assessment of risk. Lack of clear and effective guidelines puts a heavy burden on those who are responsible for evaluating projects, proposals and reports for dual-use potential.	WP.25
Australia	Researchers and others involved in gene technology are advised to "minimise risks of harm or discomfort to humans and animals likely to be adversely affected by gene technology", "promote equitable access to scientific developments and sharing knowledge, and recognise the value of benefit sharing", "conduct research in a manner that promotes the benevolent and avoids the malevolent uses of gene technology", and "conduct gene technology research after appropriate consultation and ensuring transparency and public scrutiny of the processes".	WP.31
India	Discussions on... oversight, education, awareness raising and adoption and/or development of codes of conduct are welcome with the aim of preventing misuse in the context of advances in bioscience, technology research with the potential use for purposes prohibited by the Convention.	In-room paper
Indonesia	Raising awareness and improving capability should go hand in hand.	Statement 18/08/2008

<sup>7</sup> In consultation with Japan, Australia, Canada, Republic of Korea, Switzerland, Norway and New Zealand (JACKSNNZ)

Iran (Islamic Republic of)	Raising scientific community's awareness in either state or private sectors with respect to the objectives enshrined in the BWC could be an important and effective element in promoting the national implementation of the Convention.	Statement 18/08/2008
Iran (Islamic Republic of)	Scientific community and industry that play a significant role in the development and application of bio-technology should be involved in devising educational programs.	Statement 18/08/2008
Iran (Islamic Republic of)	Scientists should be encouraged to convene seminars, workshops and prepare research papers to raise the awareness.	Statement 18/08/2008
Pakistan	Policy makers, the scientific community, industry, academia, media and the public in general should all be part of this dialogue to make them aware of risks associated with biotechnology and the legal and ethical obligations incumbent upon them.	Statement 18/08/2008
Ukraine	Suggest countries should... strengthen awareness and education of the Convention amongst life scientists.	Statement 19/08/2008
Ukraine	There is still a very limited awareness of the Convention amongst life scientists. Indeed, the awareness of life scientists is such that they cannot be expected to spontaneously initiate a "bottom-up" approach to the development and implementation of codes of conduct.	Statement 19/08/2008
IAP	Scientists should be aware of, disseminate and teach national and international law and regulations, as well as policies and principles aimed at preventing the misuse of biological research.	Statement 20/08/2008
IAP	Scientists with responsibility for oversight of research or for evaluation of projects or publications should promote adherence to these principles by those under their control, supervision or evaluation and act as role models in this regard.	Statement 20/08/2008
IUBMB	Enhance awareness of issues related to the potential malign use of life science research.	Presentation 20/08/2008
Malaysia	Reaffirm the importance of education and awareness raising in line with the Convention. The scope of education and awareness raising activities are done mainly through seminars and courses.	Statement 20/08/2008
Brazil	The government should be primarily involved in education and awareness raising programs. The need for the protection of resources and scientific supervision must therefore be part of the education of scientists, making institutional conscience the best path towards effective implementation of the BWC.	Statement 21/08/2008
Germany	Seminars at universities and informal settings should be promoted.	Statement 21/08/2008
IUPAC	Codes of conduct should be to ensure that activities in the life sciences cause no harm and thus form part of a comprehensive integrated approach to ensuring compliance with international treaties, national laws and regulations such as those relating to life sciences, illicit drugs, chemical and biological weapons, banned and severely restricted chemicals, etc.	Statement 21/08/2008
IUPAC	Codes of conduct should emphasise the importance that activities are both in compliance and perceived to be in compliance with the Convention and national implementing legislation.	Statement 21/08/2008

IUPAC	Codes of conduct should emphasize that those engaged in the life sciences will not knowingly engage in activities prohibited by the Convention or national legislation.	Statement 21/08/2008
IUPAC	Education projects for the life sciences should remind those engaged in the life sciences of the choices they face, that the life sciences can have multiple effects, and that decisions about how they are used, including not to be used as biological weapons, are the responsibility of each individual engaged in the life sciences.	Statement 21/08/2008
NAS	There is a continuing need for awareness raising and education.	Presentation 21/08/2008
Switzerland	Appropriate measures should be taken to make scientists aware that their research and development activities have wider ramifications.	Statement 21/08/2008
Switzerland	Researchers should be aware of the possible adverse social, environmental, health and security consequences of their work, and that they have both legal and ethical responsibilities in this regard.	Statement 21/08/2008
Switzerland	Both governmental institutions and individual researchers should collaborate extensively to set up a system that encourages awareness-raising among the scientific community and that creates a framework of accountability for researchers.	Statement 21/08/2008
Switzerland	Governments should not only target individual scientists but also academic institutions and associations, regulators and, private and commercial institutions.	Statement 21/08/2008
Switzerland	Research institutions and professional association should assist the process by formulating policies, rules, guidelines, and standard operating procedures for those involved in dual-use research.	Statement 21/08/2008
Switzerland	Raising awareness about the provisions of the Biological Weapons Convention is a central part of preventing the misuse of dual-use technologies, and thus in making researchers sensitive to the risks involved in their field of experience.	Statement 21/08/2008
United Kingdom	Training for personnel on ethical issues – not just in secondary and tertiary education – should be on-going and not limited to a single component in a degree course. Accessible teaching materials which address the BTWC and dual-use issues are required.	Statement 21/08/2008 and WP.10
United States	Highlight the potential danger of synthetic biology, which is a dual use technology: while it has provided significant scientific, health, and economic benefits, it is a potentially enabling technology for the de novo reconstruction of dangerous pathogens, either in part or in whole.	Presentation 21/08/2008
1540 Committee	The next step after raising awareness will be implementation for States... However, awareness-raising is still needed for parliamentarians and politicians in a position to allocate resources for implementation.	Presentation 21/08/2008
WHO	Promote information exchange and laboratory networks and foster dialogue among stakeholders in different sectors and agencies at	Presentation 21/08/2008

	country level (agriculture, industry, environment, defense, etc).	
Brazil	Areas of interest and research, levels of investment and many aspects related to biotechnology vary greatly from country to country, demanding different responses from training programmes and codes.	Statement 22/08/2008
IUPAC	There are three parallel activities which have closely similar goals yet are facing the same problems of lack of awareness and lack of education in essentially the same target audience: (i) biosafety and biosecurity and risk management to meet the obligations and goals of the BTWC; (ii) WHO's biosafety and biosecurity programme and risk assessment; and (iii) UNEP Convention on Biological Diversity Cartagena Protocol on Biosafety programme of capacity building/risk assessment of GMOs. There would be significant benefits in all three activities working together on awareness-raising and education. Although there are some differences, consideration should be given to a harmonized effort amongst these three activities to address awareness and education.	Statement 22/08/2008
Pakistan	Awareness raising and greater cross-communication among diverse stakeholders of life sciences is essential to promote and strengthen the BWC regime.	Presentation 22/08/2008
Pakistan	Interactive sessions are required to share knowledge, practices, procedures, lessons learnt through personal as well as institutional experiences.	Presentation 22/08/2008
Pakistan	Promoting awareness amongst research institutions is also necessary to apprise all stakeholders about obligations under relevant international conventions/treaties and national legislation.	Presentation 22/08/2008
Pakistan	Education and awareness raising about BTWC is an ongoing process – continuing professional education. Capacity building in biosafety and biosecurity is important component of the process.	Presentation 22/08/2008
Pakistan	National experts (should be) encouraged to participate in regional/international seminars and workshops. International experts (should be) invited (to) national awareness raising activities to benefit from best practices.	Presentation 22/08/2008
Republic of Korea	In concert with oversight, education, and awareness raising, laying out common understanding among the States Parties will be conducive to developing effective codes to deter scientists from engaging in activities prohibited by BWC.	Statement 22/08/2008
Netherlands	Develop awareness raising audiovisual materials for students, being the researchers and scientists of the future.	WP.8
China	States Parties are encouraged to actively engage in education and awareness raising of the implementation of the Convention through various forms including holding seminars or training courses.	WP.18
China	States Parties are also encouraged to strengthen information exchanges and draw useful experiences from each other through international cooperation.	WP.18
China	States Parties should further promote the awareness of the Convention, educate biological scientists and raise their awareness	WP.18

	of self-discipline so as to minimize the risks of the proliferation of biological weapons related materials and technologies at the initial stage. Meanwhile, a full play should be given to the scientific society and professional associations on their role of supervision.	
Japan <sup>8</sup>	It is desirable to develop a program for education and awareness raising swiftly.	WP.21
Japan <sup>8</sup>	Programs for education and awareness raising among scientists are a basic means for preventing the misuse of biotechnology.	WP.21
Japan <sup>8</sup>	The direct effects gained through programs for education and awareness raising may vary depending upon the integrity of the scientific community, which is underpinned by the conscience of individual scientists and their mutual trust. Therefore, from the viewpoint of ensuring the effectiveness of such programs, it is necessary to reflect and institutionalize the outcomes of these programs in an oversight mechanism and the contents of codes of conduct.	WP.21
Japan <sup>8</sup>	In developing the content of programs for education and awareness raising, it is important to deal with the following subjects: ethical and moral principles; awareness of the dual-use risks of biotechnology; management of sensitive research information, knowledge and outcomes; and legal obligations under the relevant treaties and associated domestic legislation.	WP.21
Japan <sup>8</sup>	Targets of education must include students (both in universities and secondary schools), researchers at universities, research institutions and private companies, health care workers, etc., who are/will be involved in science now and in the future. It would be also important to include the managers and administrators of universities, research institutions and private companies.	WP.21
Japan <sup>8</sup>	Since the effectiveness of educational programs can be significantly influenced by the quality of the education practitioners, it is essential to secure personnel with appropriate qualifications. In this light, it is also important to examine what qualifications are required and how to train personnel as education practitioners.	WP.21
Japan <sup>8</sup>	Since the content of education should cover many topics, it is necessary to include not only the views of scientists but also the views of other relevant stakeholders.	WP.21
Japan <sup>8</sup>	It is essential to secure personnel with appropriate qualifications. In this light, it is also important to examine what qualifications are required and how to train personnel as education practitioners	WP.21
United States	Outreach and education are among the most effective tools for promoting responsible research and enhancing biosafety and biosecurity	WP.25
United States	Appropriate training should be provided to the various levels of understanding, in order to raise the overall level of awareness.	WP.25

<sup>8</sup> In consultation with Japan, Australia, Canada, Republic of Korea, Switzerland, Norway and New Zealand (JACKSNNZ)

United States	Education on dual-use topics should be provided early and continually reinforced.	WP.25
United States	The long-term goal would be to develop a "culture of responsibility" that would include a shared general awareness of security concerns.	WP.25
Brazil	Outreach and awareness activities should have the following goals, among others: (i) to inform businessmen on existing government controls in the area of non-proliferation of weapons of mass destruction, and to stress the importance of working with the Government at a national level; (ii) to increase the quality of biosafety and biosecurity controls; (iii) to identify and analyse the potential occurrence of any commercial activity that might be considered illegal and/or prohibited under the international mechanisms that regulate transfers (exports or imports) of sensitive products or controlled technologies; (iv) to publish and publicize the lists of sensitive goods; (v) to help identify any implications of exports or imports in areas of concern.	WP.28
Brazil	Model programs should achieve national scope and reaching different types of operators, as well as public and private industries, laboratories and research institutions. Brazil proposes an unprecedented form of interaction with such operators, by not limiting their involvement to the mere accountability in the event of the wrongful manipulation of risky biological agents. In fact, the national program's main goal should be the incorporation of agents and experts as partners in the control of sensitive goods and supervision of science.	WP.28
Brazil	Safety related to access to information and dual-use technology as well as control over such access depends directly on education and awareness. Protection of resources and scientific supervision should be part of the training of scientists. That is what could be called "institutional conscience", something fundamental to the effective implementation of the BWC.	WP.28
Brazil	Along with ethics education and training programs, codes of conduct can help promoting a culture of responsibility and raise awareness, like other aspects of education, codes of conduct are closely related to local, variable characteristics. [Therefore,] such codes are to be developed nationally, tailored according to the reality of each country.	WP.28
Brazil	There is, of course, a common basis that underlines all codes of conduct in this area, and that is the concern with undue use of science and the need to minimize risks while enhancing positive results. However, areas of interest and research, levels of investment and many aspects related to biotechnology vary greatly from country to country, demanding different responses from training programs and codes. To try to internationally harmonise detailed rules might turn out to be an artificial and ineffective response.	WP.28
Brazil	Discussion on this and other topics brought up during this	WP.28

	Meeting of Experts should always take into consideration Article X of the BWC. Codes of conduct should in no way come in the way of technology transfers for peaceful purposes.	
Australia	Raising awareness of the Convention's prohibitions among scientific and technical communities is important, given their exposure to emergent biotechnologies with potential dual-use applications such as gene technology.	WP.31
India	Given the varying level of economic development of States Parties, education and awareness raising could be facilitated by strengthening international cooperation under Article X of the Convention.	In-room paper

China	Since different countries have different scientific development levels and various management systems, States Parties are encouraged to adopt codes of conduct according to their own national situations on a voluntary basis.	Statement 18/08/2008
Cuba (on behalf of NAM)	It remains the prerogative of the States Parties to decide on the content, promulgation and adoption of the code in accordance with relevant national laws, regulations and policies, consistent with the provisions of the Convention.	Statement 18/08/2008
Cuba (on behalf of NAM)	Codes of conduct should avoid any restrictions on exchange of scientific discoveries in the field of biology for prevention of disease and other peaceful purposes.	Statement 18/08/2008
Cuba (on behalf of NAM)	All necessary precautionary measures need to be taken to avoid hampering the economic or technological development of States Parties to the Convention or international cooperation in the field of peaceful bacteriological (biological) activities, while devising national codes of conduct.	Statement 18/08/2008
Iran (Islamic Republic of)	It remains the prerogative of States Parties to decide on the content, development and / or adoption of codes. However, the development and adoption of such codes of conduct could be effective and useful, when complemented with the involvement and assistance of national scientific community.	Statement 18/08/2008
Iran (Islamic Republic of)	Codes of conduct should not leave individuals and scientists with the impression that codes are designed against them or their scientific activities.	Statement 18/08/2008
Iran (Islamic Republic of)	Wider contributions by the scientists in promotion, establishment and adoption of codes would effectively remove any such misunderstandings and would enhance the implementation of codes.	Statement 18/08/2008
Iran (Islamic Republic of)	Codes of conduct should also avoid impeding scientific discovery, placing constraints on research or international cooperation and exchange for peaceful purposes	Statement 18/08/2008
Pakistan	Each State Party needs to intensify its efforts to involve life scientists, policy makers and relevant international organizations to develop flexible but effective codes of conduct containing elements of ethics, education and training programmes.	Statement 18/08/2008

Pakistan	The most critical part of this effort would be cooperation between governments and scientists.	Statement 18/08/2008
Pakistan	Five workable guiding principles are: awareness; safety and security; education and information; accountability; and oversight.	Statement 18/08/2008
Pakistan	Codes of conduct should not only focus on existing tangible and intangible technologies, but fast developing disciplines such as synthetic biology and genomic technology.	Statement 18/08/2008
Russian Federation	The professed purpose of such codes is to guide the scientific research in such a way that its peaceful results may not be used for malevolent purposes against the will and intention of scientists.	Statement 18/08/2008
Russian Federation	It is believed that the codes must include <i>inter alia</i> such elements as the criterion to define dual use research, a list of fields of science that pose the greatest risk in terms of yielding sensitive discoveries, and – the most difficult one – a framework to monitor and administer dual use research.	Statement 18/08/2008
Russian Federation	Codes may not serve as a means of constraining the freedom of peaceful scientific pursuits.	Statement 18/08/2008
Russian Federation	During the discussion on codes of conduct it is advisable to exchange views on how States Parties approach issues such as dual use biological research, research fields that have the highest risk potential in terms of generating and disseminating sensitive findings, and the ways of setting up and running oversight over dual use biological research.	Statement 18/08/2008
Ukraine	Suggest countries should foster the development and implementation of codes of conduct.	Statement 19/08/2008
IAP	Codes of conduct should include consideration of the following principles: awareness; safety and security; education and information; accountability; and oversight.	Presentation 20/08/2008
France	Information which could be used by terrorists should not be published or shared.	Presentation 21/08/2008
France	Early education in biosecurity ... increase the level of student consciousness on their future scientific responsibilities regarding dual use of technologies and armament proliferation.	Presentation 21/08/2008
France	Oaths and symbols have their own strengths – a "Hippocratic oath for scientists" (would have) a strong moral and ethical individual value to deter misuse of science	Statement 21/08/2008
Germany	Recommend that seminars should be organized more at universities.	Presentation 21/08/2008
Pakistan	Code of conduct for dual-use research is important because it complements Government's efforts to effectively oversee all scientific activities. A rational approach is required to encourage organizations and/or scientific bodies to develop and adopt their respective codes according to their specific circumstances and requirements	Presentation 21/08/2008
United Kingdom	There can be problems in devising and implementing meaningful codes in multidisciplinary environments where there is a diverse	Statement 21/08/2008

	range of scientific and engineering research activity. Development of new codes, or guidance within institutions working in the life sciences, should involve all stakeholders, including ethicists and philosophers of science as well as scientists.	and WP.10
United Kingdom	Different cultures approach issues from their own particular perspectives; this is an important consideration when institutions operating at a global level are seeking to develop codes and guidelines that would apply at all of their facilities.	Statement 21/08/2008 and WP.10
United Kingdom	To overcome problems associated with developing detailed codes that could apply internationally, it may be better to provide general overarching principles on awareness, education and oversight etc, and leave it to national bodies and individual institutions to take it forward in their own particular scientific areas.	Statement 21/08/2008 and WP.10
United Kingdom	Codes of conduct for scientists and awareness raising campaigns do not offer a foolproof defence against the misuse of the life sciences for hostile purposes. But what they can do - along with measures on oversight and education - is to heighten the levels of awareness in the academic and research communities of the need for care; highlight the nature of the Convention's legal prohibitions; and promote the need to address issues such as technology governance on a continuing basis.	Statement 21/08/2008 and WP.10
Australia	Best practice is to add elements to existing codes, as opposed to creating new codes, e.g. convergence of codes for CWC and the BWC.	Statement 22/08/2008
Bulgaria	Codes are very difficult to be implemented via administrative way as they are dealing mainly with ethic and moral categories and to agree with them and to follow them strongly depends on the personal characteristics of one scientist, his education, professional qualification, social and political orientation, his moral standards and criteria, etc.	Statement 22/08/2008
Bulgaria	[There is a need for] all national institutions, organizations, universities companies etc. involved in life science research and manufacturing activities, supported by the government and using the international experience as well, to combine their efforts and to elaborate for all people working in this field an acceptable and applicable code of conduct.	Statement 22/08/2008
China	Codes should be include: compliance with basic guidelines for scientists; investigating scientific misconduct.	Statement 22/08/2008
India	Desired outcome: creating a culture of responsibility and accountability; educating current and future scientific community; raising awareness of their professional, ethical and social responsibility; foster an institutional culture of ethos and responsibility.	Presentation 22/08/2008

India	Codes of conduct have to strike a delicate balance and look at both sides of scientific research: encourage research and development on one hand and at the same time keep an eye on its misuse.	Presentation 22/08/2008
India	Codes would weave a safety net to promote best practices in the conduct of research.	Presentation 22/08/2008
Netherlands	A code of conduct contributes to raising awareness. A code of conduct does not replace existing rules and laws.	Presentation 22/08/2008
Netherlands	The contents of a code of conduct have to be linked up with relevant scientific, social and political developments and... with daily practice of persons and organizations involved.	Presentation 22/08/2008
Netherlands	Code of conduct should be developed in an intensive dialogue with stakeholders and not in the ivory towers of science or politics.	Presentation 22/08/2008
Netherlands	Target groups: researchers and other professionals in life sciences; organizations, institutions and companies where life sciences research takes place; organizations, institutions and companies that offer education in the life sciences; organizations and institutions that offer licenses for life science research and that fund, facilitate, inspect or evaluate research; scientific and professional unions, organizations of employers and of employees in the field of life sciences; organizations, institutions and companies where dual use biological agents or toxins are stockpiled or transported; actors, editors and publishers of life science publications and administrators of life science websites.	Presentation 22/08/2008
Netherlands	Contents of the code of conduct: raising awareness; research and publication policy; accountability and oversight; internal and external communication; accessibility; shipment and transport.	Presentation 22/08/2008
Netherlands	International follow-up should include: activities in context of the InterAcademy Panel; presentations at international conferences and workshops; publishing scientific articles.	Presentation 22/08/2008
Republic of Korea	The code of conduct element can serve as a guideline for scientists to deter scientists from the misuse of biotechnology.	Statement 22/08/2008
Ukraine	A code must provide guidance to relations within the scientific community and between scientists and the public.	Statement 22/08/2008
Ukraine	The code establishes basic principles for scientists' evaluation of ethical aspects in their research and the research of their colleagues.	Statement 22/08/2008
United States	The government cannot possibly police all activities of all scientists in their labs, nor would [it] want to. It is a much more desirable situation to motivate scientists to be mindful of their own responsibilities to science and society, and codes of conduct can play an important role in that regard.	Presentation 22/08/2008
United States	A code of conduct offers the greatest opportunity for improving the security of research at the level of the individual scientist: increases understanding of biosecurity concerns and issues; persistent reminder of moral and ethical responsibilities; creates a "culture of responsibility and accountability".	Presentation 22/08/2008

United States	While not as binding as laws or regulations, codes of conduct do define professional standards that can nonetheless have weight in courts of law when there are violations of these standards.	Presentation 22/08/2008
United States	A code of conduct provides behavioural guideposts for people who want to do the right thing.	Presentation 22/08/2008
United States	Codes of conduct may have negligible impact on intentionally malicious behaviour.	Presentation 22/08/2008
United States	Successful implementation of a code of conduct is contingent on a clear understanding of the subject matter, and so for dual use research, education on the criteria for identifying dual use is key.	Presentation 22/08/2008
United States	Participation by the research community during the development of a code is key to broad acceptance.	Presentation 22/08/2008
United States	According to the US National Science Advisory Board for Biosecurity (NSABB) recommendations for a code of conduct for dual use life science research, scientific societies and professional associations are encouraged to: adapt elements as appropriate to their memberships and research-related activities; discuss a code on dual use research at annual membership meetings at part of its development and adoption - enhances awareness of the issue - promotes general acceptance of the code; use the document for formal educational and training purposes.	Presentation 22/08/2008
United States	At any stage of life sciences research, individuals are ethically obligated to avoid or minimize the risks and harm that could result from malevolent use of research outcomes. Towards that end, scientists should: assess their own research efforts for dual use potential and report as appropriate; seek to stay informed of literature, guidance, and requirements related to dual use research; train others to identify dual use research of concern and manage it appropriately and communicate it responsibly; serve as role models of responsible behaviour, especially when involved in research that meets the criteria for dual use research of concern; and be alert to potential misuse of research.	Presentation 22/08/2008
United States	A code of conduct defines specific standards of responsible conduct for the following phases and elements of the research process: proposal development; research administration and oversight; scientific and editorial review; conducting experimentation; collaboration; communicating results; educating and mentoring.	Presentation 22/08/2008
United States	Target audiences identified by the US National Science Advisory Board for Biosecurity (NSABB) in its recommendations for a code of conduct for dual use life sciences research: life sciences societies and associations; research institutions; industry; research leadership; individual life scientists; technicians, students, and others involved in the research process; funding agencies; journal editors, reviewers, and publishers.	Presentation 22/08/2008

Netherlands	If a code of conduct is to have its intended effect, the content has to link up with relevant scientific, social and political developments and ... with the daily practice of scientists and their organizations.	WP.8
Netherlands	One of the main principles underlying the Code of Conduct: to raise awareness about possible dual use of life sciences research.	WP.8
Netherlands	[A code of conduct] should be a concise document, which should concentrate on the main issues that are related to this dual use.	WP.8
Netherlands	The Code of Conduct offers rules for responsibilities and gives suggestions for regulation and sanctions on the following issues: raising awareness, research and publication policy, accountability and oversight, internal and external communication, accessibility, shipment and transport.	WP.8
Netherlands	Another way of disseminating the Code of Conduct is by organizing debates and conferences.	WP.8
United Kingdom	There needs to be clear leadership from senior personnel across organizations. Employers have a clear responsibility here; there needs to be commitment and a sustained vision. However, individuals have a personal responsibility to act ethically. There needs to be a shared value system	WP.10
United Kingdom	Provide some general overarching principles on awareness, safety and security, education and information, accountability and oversight and leave it to national bodies and individual institutions to take it forward in their own particular scientific areas.	WP.10
China	Codes of conduct and the relevant laws and regulations should supplement each other.	WP.18
China	Since different countries have different economic and scientific development levels and various management systems or practice, States Parties are encouraged to adopt codes of conduct according to their own national situations on a voluntary basis.	WP.18
China	Codes of Conduct may cover the following basic elements: (i) All those who conduct the scientific research in the life sciences or related fields should comply with the basic guidelines for scientist, i.e., scientific activity should be based on benefitting the welfare of human beings and society and the preservation of nature. (ii) All those related personnel should be fully aware of the purposes and objectives of the Convention and strictly abide by its provisions. They should firmly oppose the research, production or use of biological weapons and should not participate in or assist such activities. (iii) Scientific research bodies and laboratories should adopt and abide by the biosafety and biosecurity operation practice, strengthen the administration on pathogenic microorganisms and the related personnel so as to foresee, assess and maximally prevent the negative consequences on human kind, nature and society caused by the technical achievements. (iv) If some activities violate the provisions of the Convention or might cause harm to human kind, society or	WP.18

	nature, the personnel related should report to the competent authorities immediately. Once the violation or the dishonourable behaviour is confirmed, measures of punishment should be imposed accordingly.	
Indonesia and Norway	Codes of conduct can contribute to increasing awareness and commitment towards the BTWC. Such codes should be flexible and adapted to local circumstances, while retaining a core message.	WP.20
Japan <sup>9</sup>	In order to make codes of conduct effective, it is important when formulating and propagating codes to emphasize the positive impact of "protecting legitimate research activities of well-intentioned scientists".	WP.21
Japan <sup>9</sup>	It is viewed of great significance to encourage the participation of as many scientists as possible in the process of drafting codes of conduct so that they will share and enhance awareness of the issues mutually through discussions.	WP.21
Japan <sup>9</sup>	The contents of codes of conduct cannot be established independently of oversight mechanisms and programs for education and awareness raising, but rather need to be closely associated with the latter two means.	WP.21
Japan <sup>9</sup>	When formulating codes of conduct, it is important to emphasize in particular the necessity of incorporating skilfully the two aspects of improving the awareness of scientists and establishing procedures and rules for the management and control of pathogens and toxins, as well as sensitive research information, knowledge and outcomes.	WP.21
Japan <sup>9</sup>	[There is advantage in having] "layers" of codes of conduct representing various national, institutional, professional and other stakeholder communities. These codes will complement rather than compete with each other. It is desirable that stakeholders be encouraged to develop their own codes, applicable to their own circumstances, and articulated to their own audiences.	WP.21
Japan <sup>9</sup>	Forming a common understanding among the States Parties on the important elements of codes of conduct may be more effective.	WP.21
Cuba	Los códigos para los científicos pueden ser beneficiosos, pero por sí solos no pueden resolver el problema que representa la amenaza del uso de armas biológicas. En última instancia, los referidos códigos deberían formar parte de un proceso multilateral, integral y no discriminatorio que conduzca a un verdadero y efectivo fortalecimiento de la Convención de Armas Biológicas.	WP.29
Australia	Codes of conduct serve to assist practitioners to apply sound judgment in assessing the impact of their activities on broader ethical, safety and security issues.	WP.31

<sup>9</sup> In consultation with Japan, Australia, Canada, Republic of Korea, Switzerland, Norway and New Zealand (JACKSNNZ)

India	Codes of conduct cannot be substitute for legally binding measures to ensure strict implementation and compliance with the provisions of the Convention. However, an exchange of views to draw up best practices so as to increase awareness, especially with regard to the multifaceted nature of dual use material and technology, can be of benefit to all.	In-room paper
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### List of Abbreviations

ABSA	American Biological Safety Association
A-PBA	Asia-Pacific Biosafety Association
EU	European Union
IAP	InterAcademy Panel on International Issues
INES	International Network of Engineers and Scientists for Global Responsibility
IUBMB	International Union of Biochemistry and Molecular Biology
IUPAC	International Union of Pure and Applied Chemistry
NAM	Group of the Non-aligned Movement and Other States
NAS	National Academy of Sciences (United States)
OECD	Organization for Economic Cooperation and Development
OIE	World Organisation for Animal Health
WHO	World Health Organization
1540 Committee	United Nations Security Council Resolution 1540 Committee

Annex II

## LIST OF DOCUMENTS

BWC/MSP/2008/MX/1	Provisional Agenda for the Meeting of Experts. Submitted by the Chairman
BWC/MSP/2008/MX/2/Rev.1	Programme of Work for the Meeting of Experts. As amended and adopted during the first plenary meeting
BWC/MSP/2008/MX/3	Report of the Meeting of Experts
BWC/MSP/2008/MX/INF.1	Biosafety and biosecurity. Submitted by the Implementation Support Unit
BWC/MSP/2008/MX/INF.2	Developments in codes of conduct since 2005. Submitted by the Implementation Support Unit
BWC/MSP/2008/MX/INF.3	Oversight of science. Submitted by the Implementation Support Unit
BWC/MSP/2008/MX/INF.4	Education, outreach and raising awareness. Submitted by the Implementation Support Unit
BWC/MSP/2008/MX/INF.5 and Add.1 [ENGLISH/FRENCH/SPANISH ONLY]	List of Participants
BWC/MSP/2008/MX/CRP.1 and Add.1 [ENGLISH ONLY]	Considerations, Lessons, Perspectives, recommendations, Conclusions and Proposals drawn from the Presentations, Statements, Working Papers and Interventions on the Topics under Discussion at the Meeting
BWC/MSP/2008/MX/CRP.2 [ENGLISH ONLY]	Draft Report of the Meeting of Experts

BWC/MSP/2008/MX/MISC.1  
[ENGLISH/FRENCH/SPANISH ONLY]

Provisional List of Participants

BWC/MSP/2008/MX/WP.1  
[ENGLISH ONLY]

Efforts to promote global biosecurity and pathogen security standards. Submitted by the United States of America

BWC/MSP/2008/MX/WP.2  
[ENGLISH ONLY]

Pathogen safety and pathogen security assistance efforts of the United States. Submitted by the United States of America

BWC/MSP/2008/MX/WP.3  
[ENGLISH ONLY]

Enhancing biosecurity in the life sciences: Recommendations of the U.S National science advisory board for biosecurity. Submitted by the United States of America

BWC/MSP/2008/MX/WP.4  
[ENGLISH ONLY]

Synthetic biology: A transforming technology. Submitted by the United States of America

BWC/MSP/2008/MX/WP.5  
[ENGLISH ONLY]

National data collection processes for CBM submissions. Submitted by Switzerland

BWC/MSP/2008/MX/WP.6  
[ENGLISH ONLY]

Implementation of the UK anti-terrorism, crime and security act (ATCSA) 2001: Biosecurity aspects. Submitted by the United Kingdom of Great Britain and Northern Ireland

BWC/MSP/2008/MX/WP.7  
[ENGLISH ONLY]

Revision to the UK regulatory framework governing human and animal pathogens. Submitted by the United Kingdom of Great Britain and Northern Ireland

BWC/MSP/2008/MX/WP.8  
[ENGLISH ONLY]

Development of a code of conduct on biosecurity. Submitted by the Netherlands

BWC/MSP/2008/MX/WP.9  
[ENGLISH ONLY]

Measures to improve biosafety and biosecurity and awareness raising. Submitted by Lithuania

BWC/MSP/2008/MX/WP.10 [ENGLISH ONLY]	Oversight, education and awareness raising: Report of a UK seminar, 28 March 2008. Submitted by the United Kingdom of Great Britain and Northern Ireland
BWC/MSP/2008/MX/WP.11 [ENGLISH ONLY]	Oversight of emerging technologies: Examples of UK approaches to responsible development of science. Submitted by the United Kingdom of Great Britain and Northern Ireland
BWC/MSP/2008/MX/WP.12 [ENGLISH ONLY]	The DFG code of conduct: Work with highly pathogenic microorganisms and toxins. Submitted by Germany
BWC/MSP/2008/MX/WP.13 [ENGLISH ONLY]	European Union legislation and recommendations related to biosafety and biosecurity. Submitted by Germany on behalf of the European Union
BWC/MSP/2008/MX/WP.14 [ENGLISH ONLY]	Registration and licensing of facilities and persons handling biological materials. Submitted by Germany
BWC/MSP/2008/MX/WP.15 [ENGLISH ONLY]	Security vetting of personnel handling dangerous biological materials. Submitted by Germany
BWC/MSP/2008/MX/WP.16 [ENGLISH ONLY]	Implementation of legislation and measures related to biosafety and biosecurity in EU member States. Submitted by Germany on behalf of the European Union
BWC/MSP/2008/MX/WP.17 [ENGLISH ONLY]	Biosafety and biosecurity. Submitted by Canada
BWC/MSP/2008/MX/WP.18 [CHINESE ONLY <sup>10</sup> ]	Oversight of science, education and awareness raising, codes of conduct. Submitted by the People's Republic of China
BWC/MSP/2008/MX/WP.19 [CHINESE ONLY <sup>11</sup> ]	Biosafety and biosecurity. Submitted by the People's Republic of China

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<sup>10</sup> An English unofficial translation is included after the Chinese text.

<sup>11</sup> An English unofficial translation is included after the Chinese text.

BWC/MSP/2008/MX/WP.20  
[ENGLISH ONLY]

Regional seminar for South East Asia on promoting and implementing biosafety and biosecurity. Submitted by Indonesia and Norway

BWC/MSP/2008/MX/WP.21  
[ENGLISH ONLY]

Oversight, education, awareness raising and codes of conduct for preventing the misuse of bio-science and bio-technology. Submitted by Japan

BWC/MSP/2008/MX/WP.22  
[ENGLISH ONLY]

National, regional and international measures for improving biosafety and biosecurity with a focus on the safety of pathogens and toxins at the laboratory level. Submitted by Japan

BWC/MSP/2008/MX/WP.23  
[ENGLISH ONLY]

Overview of major international biosecurity activities since the 2003 intersessional meeting. Submitted by the United States of America

BWC/MSP/2008/MX/WP.24  
[ENGLISH ONLY]

Biosecurity: Moving beyond the laboratory. Submitted by the United States of America

BWC/MSP/2008/MX/WP.25  
[ENGLISH ONLY]

Outreach and education in the life sciences: Case study in the U.S. Department of Energy National Laboratories. Submitted by the United States of America

BWC/MSP/2008/MX/WP.26  
[ENGLISH ONLY]

Australian Assistance to Strengthen Regional Biosafety and Biosecurity Capacity. Submitted by Australia

BWC/MSP/2008/MX/WP.27  
[FRENCH ONLY<sup>12</sup>]

Initiatives de Coopération de l'Union Européenne Visant à améliorer la Sécurité et la Sûreté Biologiques. Présenté par la France au nom de l'Union européenne

BWC/MSP/2008/MX/WP.28  
[ENGLISH ONLY]

National Measures and Views on Biosafety and Biosecurity. Submitted by Brazil

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<sup>12</sup> An English unofficial translation is included after the French text.

BWC/MSP/2008/MX/WP.29 [SPANISH ONLY]	Experiencia Nacional Sobre las Medidas Para Mejorar la Bioseguridad y la Protección en los Laboratorios de Patógenos y Toxinas; y Sobre la Creación de Capacidad, la Gestión de Riesgos, la Supervisión de la Ciencia y la Educación y Elevación de la Conciencia. Presentado por Cuba
BWC/MSP/2008/MX/WP.30 [ENGLISH ONLY]	Communication Issues Associated with Implementation of the SSBA Regulatory Scheme. Submitted by Australia
BWC/MSP/2008/MX/WP.31 [ENGLISH ONLY]	Australia's National framework for the Development of Ethical Principles in Gene Technology and the Biological Weapons Convention (BWC). Submitted by Australia
BWC/MSP/2008/MX/WP.32 [ENGLISH ONLY]	Regulation of Biological Agents in Australia. Submitted by Australia
BWC/MSP/2008/MX/WP.33 [SPANISH ONLY <sup>13</sup> ]	Concientización de la Comunidad Científica de Argentina sobre el Potencial Uso Hostil de las Ciencias Biológicas. Presentado por Argentina
BWC/MSP/2008/MX/WP.34 [ENGLISH ONLY]	The Laboratory Biorisk Management Standard and its Applicability under the BWC. Submitted by Norway
BWC/MSP/2008/MX/WP.35 [ENGLISH ONLY]	Preparing the Ground for the CBM Content Debate: What Information Builds Confidence? Submitted by Switzerland

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<sup>13</sup> An English unofficial translation is included after the Spanish text.