

**ADDRESSING THE 'DUAL-USE' DILEMMA  
THE BIOLOGICAL WEAPONS CONVENTION  
'GENERAL PURPOSE DEFINITION'  
OF BIOLOGICAL WEAPONS**

DR BOB MATHEWS\*

This paper commences with a discussion of the 'dual-use' dilemma in biological science and technology, followed by a review of how the 1972 Biological Weapons Convention (BWC)<sup>1</sup> addresses the dual-use dilemma.

THE DUAL-USE DILEMMA

Much of the biological materials (eg seed cultures of pathogens and toxins), production equipment (eg fermenters, centrifuges, freeze dryers), technology and knowledge (ie 'know-how'), and infrastructure (including high containment facilities) that are used by the biotechnology industry to support public health, medicine, pharmaceuticals and agriculture requirements can also be used to support an offensive biological weapons production program.

There has been an increasing globalisation of the biological sciences and biotechnology. As a result, many countries have developed medical, education and scientific research organisations for the various phases of biological research which support their expanding biotechnology and pharmaceutical industry sectors.

In the last few decades, there have also been significant advances in the biological sciences and biotechnology, including in genetic engineering techniques as well as in production equipment,<sup>2</sup> which have resulted in advances in the ability to mass produce biological agents for legitimate medical, public health and commercial applications.<sup>3</sup> Unfortunately, these advances could also be used to produce biological agents for weapons purposes.

Because of the dual-use characteristics of biological materials and production equipment, it may be difficult to distinguish clearly between legitimate activities to support the public health, medicine, pharmaceuticals and agriculture sectors (such as

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\* Dr Bob Mathews is Head of NBC Arms Control at the CBRN Defence Centre, Defence Science and Technology Organisation, Australian Department of Defence, Melbourne.

<sup>1</sup> *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, opened for signature 10 April 1972, 1015 UNTS 163 (entered into force 26 March 1975).

<sup>2</sup> For example, using recombinant techniques, toxin producing genes could be spliced to a common host organism, enabling large scale production (within a short time) of toxic agents which have previously only existed in nature in small quantities.

<sup>3</sup> Products include ethanol, fermented beverages, vaccines, antibiotics, enzymes, yeast, vitamins and single cell proteins as a supplement for animal feeds.

the development and production of vaccines and bio-pesticides) from an offensive biological weapons program.

Thus a country wishing to develop an offensive biological weapons program would be able to incorporate such a program within its existing biotechnology and pharmaceutical industry so as to obscure its activities. The country could use its medical, education and scientific research organisations for the various phases of biological agent procurement, research, development and production of biological weapons. A terrorist group seeking to acquire a biological weapon might steal a biological weapon from a country's existing biological weapons stockpile; buy a biological weapon on the 'black market'; or build an 'improvised' biological weapon. Because of the dual-use nature of biological materials, production equipment and know-how, there is a danger of a terrorist group building its own biological weapon, using commercially available dual-use materials and equipment.

Further, because of the high levels of international activity in the biological sciences and biotechnology sector, ranging from collaborative research and development at universities to the high levels of trade in the biotechnology sector, there is a possibility that biological scientists and traders from a country with absolutely no interest in offensive biological weapons, might inadvertently assist a terrorist group in developing offensive biological weapons programs by supplying it with the requisite dual-use biological materials, production equipment, technology or know-how.

#### THE BIOLOGICAL WEAPONS CONVENTION

So how does the BWC handle the dual-use dilemma? How can the BWC effectively prohibit the use of all pathogens and toxins that could be used for warfare or other hostile purposes, without hindering peaceful applications of these pathogens and toxins? Clearly, the prohibitions contained within the BWC would not be effective if they were to be limited to those pathogens and toxins which have already been weaponised by states (eg anthrax, plague, botulinal toxin, etc).

This was a serious challenge for the Geneva negotiators in the early 1970s. Article I of the BWC contains a 'General Purpose Definition' of biological weapons, which effectively includes a prohibition of development and use of any pathogen or toxin for any hostile purposes. Article I of the BWC states that:

Each State Party to this Convention undertakes never in any circumstances to develop, produce, stockpile or otherwise acquire or retain:

- (1) Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes:
- (2) Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

Using this approach, the prohibitions contained within the BWC are not limited to those pathogens and toxins which have already been weaponised by states, but include any pathogen or toxin 'of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes'. Thus, biological weapons attacks along the lines of the deliberate Salmonella outbreak in Oregon in 1984, even though

not intended to kill anyone, are prohibited by the BWC. The same formulation is used in Article III.

So, at least in theory, the various prohibitions and obligations contained in the BWC should play a substantial role in making it more difficult for a 'rogue state' or a terrorist group to acquire a biological weapon, or to obtain the raw materials, production equipment, technology and know-how for the production of a biological weapon from the States Parties to the BWC.

However, in practice, the General Purpose Definition can cause difficulties with some aspects of national implementation measures, irrespective of political commitment to arms control treaties by States Parties. In practice, enhanced security benefits from these treaties depend on whether States Parties have enacted the necessary domestic legislation to translate the treaty prohibitions into domestic law, and how effectively the domestic laws are implemented.

As discussed above, the key issue here is the dual-use nature of materials and equipment associated with biological weapons — and the difficulty in recognising when an apparently innocent transaction may have a hostile intent. This results in the possibility of the suppliers of dual-use items and technology providing inadvertent assistance to a bio-terrorism program.

A key challenge in enabling the BWC to fulfil this role is the translation of the internationally agreed treaty prohibitions contained within the BWC (and United Nations Security Council resolution 1540) into effective domestic measures by all UN Member States.

Based on Australia's experience with the operation of export licensing measures on dual-use biological items, an effective national export control and domestic monitoring system based on the obligations under Article III of the BWC will require a sound legislative basis; credible control lists of dual-use items; catch-all control provisions; a workable licensing system; effective implementation and enforcement measures; and information sharing.<sup>4</sup> Domestic legislation is essential, but legislation in itself is not enough. There will need to be a high level of cooperation between a number of government departments, including international policy, export licensing authorities, health and customs.

The ease with which small but significant quantities of biological agents (and even small-scale production equipment) may be transferred means that there will also need to be practical outreach programs to raise awareness among the broader scientific community, including researchers, facility operators and trading institutions, of the potential for misuse of biological items and of the possibility of their inadvertent support to proliferation or bio-terrorism.

To be effective, national export control and domestic monitoring systems will require high levels of cooperation between government officials and the scientific community, and a strong sense of responsibility and vigilance within the scientific community. There will be a key role for relevant scientific associations and peak industry groups in this cooperative activity, as well as in the development of codes of conduct for scientists, the topic to be discussed at the BWC Meetings in 2005.

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<sup>4</sup> This includes the provision of scientific and technical support to licensing and customs officials, as well as information on destinations and end-use of trade in dual-use items.

## THE DEVELOPMENT OF THE AUSTRALIA GROUP EXPORT CONTROL LISTS OF BIOLOGICAL PATHOGENS, TOXINS & DUAL-USE EQUIPMENT

DR BOB MATHEWS\*

### INTRODUCTION

In response to the increased awareness of the threat of biological terrorism following 11 September 2001 and the anthrax letter incidents, and with the recent adoption of United Nations Security Council resolution 1540,<sup>1</sup> there have been a number of requests by countries which have not participated in the 'Australia Group' for background information on the various Australia Group export control lists. This paper has been prepared in response to those requests, as a means to provide a better understanding of the development and evolution of the Australia Group export control lists of biological pathogens, toxins and dual-use equipment lists.

### THE EARLY DAYS OF THE AUSTRALIA GROUP

The Australia Group dates back to 1985 when a group of 15 countries agreed to consult and harmonise their various national export controls on dual-use chemical weapons precursor chemicals to prevent Iraq from obtaining these chemicals for the production of chemical weapons, which it was using in the Iraq–Iran war. For the first few years of the Australia Group consultations, the main focus remained chemical weapons proliferation in the Middle East. With the original focus on chemical weapons proliferation, the meetings became known as the 'Australia Group Meeting on Chemical Weapons Precursors'.

However, during the Group's April 1988 meeting, it was reported that a number of countries of concern were expanding their proliferation activities from chemical weapons programs to biological weapons programs. By the end of 1989, it had become clear that Iraq and a number of other Middle Eastern countries were attempting to acquire seed cultures, fermentation equipment and technology that could support an offensive biological weapons program. A particular difficulty recognised by the Australia Group participants was in distinguishing between legitimate biotechnological activities and those activities that may have been part of a biological weapons program.

This led to discussion by the Australia Group of various potential means to counter biological weapons proliferation including:

- national guidelines to industry and research institutes;

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\* Dr Bob Mathews is Head of NBC Arms Control at the CBRN Defence Centre, Defence Science and Technology Organisation, Australian Department of Defence, Melbourne. An earlier version of this paper appeared in (2004) 66 *CBW Conventions Bulletin* 1–4.

<sup>1</sup> SC Res 1540, UN Doc S/RES/1540 (28 April 2004).

- lists of dual-use biotechnology equipment that could be suitable for biological weapons production (which was being proposed as a ‘warning list’); and
- indicators of suspicious transactions which may indicate attempted procurement of items for a biological weapons proliferation program.

During the remainder of 1990, several Australia Group participants conducted extensive domestic outreach activities to inform suppliers of biological materials, equipment and expertise of the potential risks associated with biological weapons proliferation. These activities were regarded as useful, but not sufficient.<sup>2</sup>

Indeed, it was agreed in December 1990 that the title of the meetings should be changed to the ‘Australia Group Informal Consultations on Preventing Association with Chemical and Biological Weapons Programs’, to reflect the changing scope and objectives (as well as the informal nature) of the meetings.

### ADDRESSING BIOLOGICAL WEAPONS PROLIFERATION

The Australia Group meeting in June 1991, which occurred a few months after the Gulf War, was a watershed. With coalition forces anticipating that they may have been attacked with Iraqi chemical and biological weapons came greater awareness, clarity and recognition of the threat posed by chemical and biological weapons proliferation, and greater determination on the part of Australia Group participants to make the Group as effective as possible in countering the chemical and biological weapons threat. In recognition of the seriousness of the biological weapons proliferation threat, participants agreed to convene a series of ‘Biological Weapons Experts’ meetings<sup>3</sup> to consider the development of export control lists for the more relevant biological weapons agents and dual-use production equipment.

The approach adopted was to develop four separate lists: one list for human and zoonotic pathogens and toxins (referred to as the List of Biological Agents for Export Control); a List of Plant Pathogens for Export Control; a List of Animal Pathogens for Export Control; and a List of Dual-Use Biological Equipment for Export Control.

#### *A Pathogens and Toxins*

In the development of the lists of pathogens and toxins, factors for consideration as to whether a particular agent should be included on the list of biological agents included: whether the agent had ever been developed for or used in warfare; whether the agent had been sought by a country of proliferation concern; whether the agent could be mass produced; and whether the agent is infectious in the aerosol form. For the list of plant pathogens, the factors included whether the pathogen is a mass producible agent, infectious in aerosol form, which damages or kills plants to create serious socio-economic consequences. For the list of animal pathogens, factors included whether the pathogen is a mass producible agent which kills or incapacitates animals to create serious socio-economic or public health consequences.

<sup>2</sup> For example, Australia reported to the Australia Group meeting in December 1990 that its outreach activities had been useful, but that there had been predictable difficulties convincing some, notably academics, of the reality of the biological weapons threat.

<sup>3</sup> The participants of these meetings included biological scientists from a number of government departments (including defence, health, agriculture) and national biological research organisations.

In December 1992, the Australia Group plenary adopted the List of Biological Agents for Export Control which consisted of a Core List<sup>4</sup> containing 20 viruses (including Ebola, Lassa fever and Marburg viruses), four rickettsiae, 13 bacteria and 10 toxins. It also adopted a Warning List<sup>5</sup> containing eight viruses, five bacteria and four toxins. The List of Animal Pathogens for Export Control, which consisted of a Core List containing 15 viruses and one bacterium, was adopted at the same meeting. In June 1993, the Australia Group plenary adopted a List of Plant Pathogens for Export Control which consisted of a Core List containing two bacteria and six fungi, and Awareness Raising Guidelines<sup>6</sup> containing two bacteria, two fungi and one virus. Each list also covered genetically modified micro-organisms.<sup>7</sup>

### B *Dual-Use Biological Equipment*

The dual-use biological equipment control list was developed by the 'Biological Weapons Experts' group in parallel to the lists of pathogens and toxins. The factors considered when developing this list were the potential relevance of particular items to biological weapons proliferation, and whether the items had previously been used in a biological weapons program or had been sought by recent proliferators.<sup>8</sup>

In December 1992, the Australia Group agreed on a common control list of dual-use biological equipment, including complete containment facilities at P3 and P4 containment level, fermenters with capacity greater than 300 litres, centrifugal separators, cross-flow filtration equipment, freeze drying equipment, individual P3 and P4 equipment items including class III biological safety cabinets, and aerosol inhalation chambers. Items included on a separate list for awareness raising were micro-encapsulation equipment; fermenters with capacity smaller than 300 litres, and clean air rooms that may be used for P3 or P4 containment.

The transfer of 'Related Technology', that is, technology for the development or production of Australia Group controlled biological agents or Australia Group

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<sup>4</sup> The Core List contains those agents that all Australia Group participant countries agreed to place under national export control.

<sup>5</sup> The agents included on the Warning List, although not agreed for inclusion on the Core List (ie common control list), were considered sufficiently important for a list to be provided to researchers, industry and traders, in order that they seek guidance if they were suspicious about a particular export request of any of the listed items (note that the term 'Warning List' had its genesis during the development of the Group's chemical weapons precursor control list in the 1980s).

<sup>6</sup> The role of the Awareness Raising Guidelines list of plant pathogens was essentially the same as the Warning List of biological agents. However, the scientists developing the plant pathogen list thought that the term Awareness Raising Guidelines was a more appropriate title for the list of plant pathogens.

<sup>7</sup> 'Genetically modified micro-organisms or genetic elements that contain nucleic acid sequences associated with pathogenicity derived from the pathogens on the list', and 'Genetically modified micro-organisms or genetic elements that contain nucleic acid sequences coding for any of the toxins on the list.'

<sup>8</sup> Important considerations for the Australia Group when developing or adjusting the lists are that the measures should be effective in impeding the production of biological weapons; they should be practical and reasonably easy to implement; and they should not impede the normal trade of materials and equipment used for legitimate purposes.

controlled dual-use biological equipment items, was also placed under export control.<sup>9</sup>

### C 'Catch-All' Provisions

In developing and refining the various Australia Group export control lists, it was recognised that it would not be possible to control every type of pathogen, toxin or dual-use item that could be misused for a biological weapons program or for bio-terrorism purposes. In recognition of the dual-use dilemma, Australia Group participants implemented a 'catch-all' provision, whereby participants will not supply an unlisted item<sup>10</sup> when there is particular concern about potential diversion of the item for chemical or biological weapons purposes. Thus, the 'catch-all' provision remains a safety net to cope with the dual-use dilemma, to avoid as far as possible providing inadvertent assistance to biological weapons proliferation or bio-terrorism activities.

## REVIEWS AND REFINEMENTS 1994–2001

The conclusion of the Australia Group meeting in June 1993 marked for the first time the adoption of a full range of lists covering precursor chemicals, dual-use chemical production equipment, as well as the four lists of biological weapons relevant items. This achievement was recognised as heralding a new phase in the work of the Australia Group, with the technical issues largely settled and hopefully only requiring continuing maintenance.

The various biological lists have been reviewed regularly since 1993. The first meeting of experts to review the lists was convened in October 1995, which resulted in taxonomic updating of several agents, the addition of four toxins to the List of Biological Agents for Export Control,<sup>11</sup> exemption of vaccines and immunotoxins from the export control lists, redrafting of the Genetic Modification text to extend controls to genetic material coding for sub-units of toxins on the Core and Warning Lists, and subjecting to export control all fermenters of capacity greater than 100 litres.

Issues addressed at subsequent meetings of experts included proposals for other pathogens, toxins and equipment items to be added to the various export control lists, and other refinements of the controls, for example, whether there should be exemption of control of products containing small quantities of Australia Group controlled substances that are specifically packaged and marketed for medical or public health purposes (including those that contain irreversibly inactivated micro-organisms).<sup>12</sup> In addition, there was further clarification of the Genetic Modification text to include genetic elements obtained by chemical synthesis.

<sup>9</sup> However, it was agreed that technology transfers do not apply to information that is in the public domain, basic scientific research, or the minimum necessary information for patent application.

<sup>10</sup> That is, an item which is not contained on any of the Group's control lists, or an item below the licensing threshold (for example, a fermenter with capacity less than 20 litres).

<sup>11</sup> Aflatoxin, which had been identified as a major element of Iraq's biological weapons program, was added to the Core List, and three toxins were added to the Warning List.

<sup>12</sup> Agreement was reached to exclude from export control botulinum toxins when in a product form meeting the following requirements: a pharmaceutical formulation designed for human

## RESPONSE TO BIO-TERRORISM

In response to the increased awareness of the threat of biological terrorism following September 11 and the anthrax letters in October 2001, the different biological lists have remained under regular review in an effort to further raise the barriers to biological terrorism as well as biological weapons proliferation, in accordance with the counter-terrorism objective that is now included in the philosophy of the Australia Group.<sup>13</sup>

The most recent review has led to the addition of 14 biological agents (human pathogens) and eight new toxins to the List of Biological Agents for Export Control, which raises the total number of human pathogens controlled to 51 (32 viruses, four rickettsiae and 15 bacteria), and the total number of toxins controlled to 19.<sup>14</sup> Likewise two new animal pathogens have been added to the List of Animal Pathogens for Export Control (which now contains 17 viruses and one bacterium under export control), and five new plant pathogens have been added to the List of Plant Pathogens for Export Control (which now contains five bacteria, six fungi and two viruses under export control).

There have also been adjustments and refinements to the List of Dual-Use Biological Equipment for Export Control, including the reduction in the capacity of fermenters under control from 100 litres to 20 litres, reflecting the smaller scale of operation that might be employed by a terrorist group.

### THE AUSTRALIA GROUP CONTROL LISTS AND THE BROADER INTERNATIONAL COMMUNITY

Historically, a number of developing countries have opposed informal export control arrangements such as the Australia Group.<sup>15</sup> However, post September 11, a number of States Parties to the Biological Weapons Convention (BWC)<sup>16</sup> which do not participate in the Australia Group and have previously been critical of the Group, have recognised that the national export licensing measures developed by the Australia Group would raise the barriers to biological terrorism. This has led to an acceptance amongst an increasing number of States Parties of the role of the Australia Group lists as a means to implement their non-proliferation obligations under Article III of the BWC. There has been a growing acceptance of the Australia Group lists as

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administration in the treatment of medical conditions; packaged for distribution as medical products; and authorised by a state authority to be marketed as a medical product.

<sup>13</sup> For example, at the meeting in October 2001, the Australia Group participants expressed the resolve of their governments to prevent chemical and biological weapons proliferation, whether by state or non-state actors, and agreed that the Group has an important role to play in reducing the threat of chemical and biological weapons terrorist attacks. See Australia Group Meeting Press Release, *Tackling the Threat of Chemical and Biological Weapons*, AG/Oct01/Press/Chair/24 (2001) available at <<http://www.australiagroup.net>>.

<sup>14</sup> A number of these additional pathogens and toxins were transferred from the Warning List.

<sup>15</sup> See, eg, Onno Kervers, 'Strengthening Compliance with the Biological Weapons Convention: The Protocol Negotiations' (2002) 7(2) *Journal of Conflict and Security Law* 275.

<sup>16</sup> *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, opened for signature 10 April 1972, 1015 UNTS 163 (entered into force 26 March 1975).

the international benchmark in relation to export controls directed at chemical and biological weapons proliferation.

At the same time, the Group's participants have recognised that the effectiveness of the various control lists derives from their collective application, especially in view of the increasing number of countries which have become potential inadvertent suppliers of relevant items as a result of the increasing globalisation of the biological sciences and the biotechnology industry. For this reason, participants are encouraging all exporting and transshipment countries to implement similar measures. In recent years, Australia Group participants have maintained a practice of briefing a large number of non-participating countries on the outcomes of the Australia Group meetings. These briefings include making available lists of precursor chemicals, biological agents, and related equipment and technologies that are of proliferation concern.

The net result of increased concerns about bio-terrorism and the Australia Group outreach activities is that a number of countries which are not participants in the Australia Group meetings are adopting their own national export licensing systems, using lists similar to those developed by the Group. Likewise, since 11 September 2001, a number of states have also put various domestic monitoring procedures in place, in some cases based on the dual-use items in the four Australia Group biological lists, as a means to increase the barriers to bio-terrorism activities.

#### CONCLUDING COMMENTS

This paper has tried to capture the concerns that have led to the development of the original biological weapons pathogen, toxin and dual-use equipment control lists, and the evolutionary nature of the various biological weapons lists based on the early experiences in implementing the various lists; advances in biological science and technology; and changing risk assessments, including the terrorist threat.

It is interesting to reflect on the different philosophical approach to the development and evolution of the Australia Group biological weapons agents control lists, compared to the development and evolution of the Australia Group chemical weapons precursor control list.<sup>17</sup> In the case of the chemical weapons precursor list, it was generally known which chemical weapons agents the countries of concern were trying to produce, based on the knowledge of which chemical weapons precursors were being sought, with confirmation sometimes obtained based on results from investigations of alleged use.<sup>18</sup> However, less information was available at that time about which pathogens and toxins were being sought by countries of concern, so a major factor in developing the various biological weapons export control lists was the intrinsic risk posed by a particular pathogen or toxin, rather than knowledge that it had been sought for proliferation purposes. Furthermore, additions and adjustments to the various biological weapons lists have often been based more on developments in

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<sup>17</sup> Bob Mathews, 'Comparison of the Chemicals on the Australia Group Control List with those in the CWC Schedules' (1993) 21 *CBW Conventions Bulletin* 1.

<sup>18</sup> See, eg, United Nations, *Report of the Specialists Appointed by the Secretary-General to Investigate Allegations Made by the Islamic Republic of Iran concerning the Use of Chemical Weapons*, UN Doc S/16433 (26 March 1984).

biology and biotechnology, whereas subsequent additions to the chemical weapons precursor list have been based on information that alternative precursors (often 'earlier' in the production process) were being sought for the same chemical weapons agents, or that the countries of concern were seeking other precursors to produce alternative (in some cases, older, less effective) chemical weapons agents.

The Australia Group biological export control lists have been developed and refined over a 14-year period, on a consensus basis, by the countries participating in the Australia Group, which now number 38 countries. As discussed above, there has been a growing acceptance of the Australia Group lists as the international benchmark in relation to export controls directed at chemical and biological weapons proliferation. However, this is not to suggest that the Australia Group lists should be regarded as 'perfect', or that there has not been criticism of the contents of the lists. For example, a number of scientists have questioned why Dengue fever virus is on the List of Biological Agents for Export Control since it is 'ubiquitous' and 'doesn't kill anyone'.<sup>19</sup> In fact, Dengue fever virus was included on the original list in 1992 because it had been seriously considered for development as a biological weapon by at least two countries in the 1950s and 1960s,<sup>20</sup> and there were concerns that countries of proliferation concern in the early 1990s may have tried to develop it as part of an offensive biological weapons capability.<sup>21</sup>

Further development and refinement of the four Australia Group biological lists can be expected based on future advances in biological science and technology, and changing risk assessments.

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<sup>19</sup> The fact that Dengue fever virus is an incapacitating agent rather than a lethal agent is not a reason for not having it on the list. Indeed, a number of other agents on the Australia Group lists would also be regarded primarily as incapacitating agents rather than lethal agents. In addition, the prohibitions under the BWC include incapacitating as well as lethal biological agents.

<sup>20</sup> See, eg, Erhard Geissler (ed), *Biological and Toxin Weapons Today* (1986) 22.

<sup>21</sup> See, eg, *Jane's Information Group Chemical-Biological Defence Guidebook* (1999) 278.

## AUSTRALIAN EXPORT CONTROLS

BRAD HOWLETT\*

### THE ROLE OF EXPORT CONTROLS

Few countries today can claim not to have been the target of some form of illicit procurement activity. This can occur through the unwitting supply of sensitive goods, technologies or services or as a diversion point to mask the origin or destination of a consignment.

Export controls are an essential element in countering the proliferation of conventional arms and Weapons of Mass Destruction (WMD). The rigorous application of export controls plays a vital role in monitoring and inhibiting the supply of military and WMD-related materials and technologies to states of proliferation concern and terrorist groups. However, the effectiveness of export controls relies on the cooperation between as many countries as possible.

With the increased adoption of export controls within the international community, proliferators have been forced to adopt more sophisticated methods of obtaining sensitive goods. Some of the more common methods identified include:

- the use of front companies, both in-country and abroad;
- the use of transshipments to disguise the origin and intended destination of a consignment; and
- the diversion or substitution of goods in transit.

While the role of export controls in countering proliferation is widely acknowledged, it should be noted that export controls work best in concert with a number of other processes designed to minimise opportunities for proliferators. These other processes will be discussed further in this paper.

### INTERNATIONAL EXPORT CONTROL REGIMES

At the international level, Australia is an active member of all four export control regimes — the Wassenaar Arrangement; the Australia Group; the Nuclear Suppliers' Group; and the Missile Technology Control Regime. These four export control regimes have a common objective in seeking to control the proliferation of WMD and their delivery systems, as well as the transfer of conventional weapons and dual-use technologies with destabilising implications. Goods controlled under these regimes are included in Australia's list of controlled goods — known as the Defence and Strategic Goods List (DSGL).

In addition to the export control regimes, Australia is also a member of the Biological Weapons Conventions,<sup>1</sup> the Chemical Weapons Convention,<sup>2</sup> and the

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\* Brad Howlett is Assistant Director of Defence Trade Control and Compliance in the Australian Department of Defence.

Nuclear Non-Proliferation Treaty.<sup>3</sup> The prohibitions and provisions in these conventions have been enacted into Australian law.

### CHALLENGES TO EXPORT CONTROLS

Recent years have witnessed fundamental changes that have challenged the effectiveness of national export control systems. Economic globalisation has seen the number of potential supplier countries grow considerably. Some countries which were previously dependant on imports of WMD-related materials and technologies have now acquired an indigenous capability and can manufacture and apply those materials themselves.

Additionally, the rapid pace of technological change poses challenges to keeping lists of controlled dual-use items up to date, while monitoring intangible technology transfers is complicated by advances in communications and information technology. An intangible technology transfer include a transfer of controlled technology by fax, email or by posting information on the Internet. It can also occur through the provision of information at seminars and conferences.

States seeking to acquire WMD have sought to exploit these developments and any weak links that these developments have opened up in traditional non-proliferation measures. Of even greater concern is a radical shift in the operational methods of terrorist groups. Several terrorist groups are making a concerted effort to acquire WMD that are able to cause mass casualties and/or large-scale economic disruption. Monitoring procurement activity by terrorist groups presents a major challenge for export control systems.

### EXPORT ADMINISTRATION

The Australian Government has tasked the Department of Defence with the administration of export controls for defence and dual-use goods. The Defence Trade Control and Compliance section (DTCC) is the area within the Department of Defence that is responsible for this function. Exporters are required by law to obtain approval from DTCC prior to undertaking the export of any item appearing on Australia's list of controlled goods. The export of controlled goods without DTCC approval can result in fines of up to A\$275 000 or 10 years imprisonment or both.

In assessing an application for export, DTCC can request supporting documentation from the exporter. Additional information required can include:

- end-user certificates;
- international import certificates;

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<sup>1</sup> *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, opened for signature 10 April 1972, 1015 UNTS 163 (entered into force 26 March 1975).

<sup>2</sup> *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction*, opened for signature 13 January 1993, 1974 UNTS 45 (entered into force 29 April 1997).

<sup>3</sup> *Treaty on the Non-Proliferation of Nuclear Weapons*, opened for signature 1 July 1968, 729 UNTS 161 (entered into force 5 March 1970).

- copies of contracts or other evidence of transfer of ownership; and
- in some cases, re-export or re-transfer approval from the source country.

The type of supporting documentation requested will vary depending on the type of goods involved, the destination and the proposed end-user and end-use of the goods. DTCC may request as much information as is reasonably necessary to assess the bona fides of the transaction.

All applications to export are assessed on a case by case basis. However, some technologies are more sensitive from a strategic perspective than others, as are some export destinations. Australian controls differentiate between levels of technology and export destinations in accordance with their respective strategic sensitivity.

Applications deemed sensitive are referred to an inter-departmental committee for review. This committee is chaired by the Department of Defence and includes representatives from the Department of Foreign Affairs and Trade, the Department of Prime Minister and Cabinet, Attorney-General's Department, the Australia Trade Commission (Austrade), the Australian Customs Service, and the Department of Defence. Generally the export of controlled goods will not be permitted:

- to countries against which the United Nations Security Council or General Assembly has imposed a mandatory arms embargo;
- where the goods are likely to be used in a manner contrary to a decision of the Security Council or contrary to the provisions of international instruments to which Australia is a party;
- to countries with policies or interests which are inimical to the strategic interests of Australia or its friends and allies;
- to governments that might compromise the rights of their citizens;
- where foreign and strategic policy interests outweigh export benefits;
- if the export would be reasonably judged to adversely affect Australia's military capability;
- if there is reason to believe the goods could be used in mercenary, terrorist or other criminal activities; and
- if the export conflicts with Australia's obligations as a member of the various international non-proliferation treaties and export control regimes.

Approval to export can be granted at the Assistant Director level within DTCC. However, only the Minister for Defence may deny an application to export or revoke or withdraw existing permission.

It is important to note that Australia takes the issuing of denials very seriously. It is against our international interests to prevent trade unless there is strong evidence to suggest that the export should not proceed.

## RAISING INDUSTRY AWARENESS — OUTREACH

Administering the export controls is made much easier when exporters are aware of the existence of controls and the obligations imposed by them. To ensure this occurs, DTCC has developed a strategy for raising awareness of the export controls and obligations that accompany them. This awareness program is commonly referred to as 'Outreach'.

Following the events of September 11 and the bombings in Indonesia, the shift in focus by the Australian Government towards counter-proliferation and anti-terrorism activities has led to changes in the approach to administering export controls and consequently, an evolution of the role of Outreach.

Past Outreach activities generally occurred on a needs basis and did nothing more than impart the basic information required to ensure exporters were aware of, and hopefully compliant with, the export controls. At the government level, there were limited forums available to bring together various agencies to discuss export control and counter-proliferation activities and take a 'whole-of-government' approach. Government agencies were largely unaware of the Outreach activities being undertaken by other agencies or of the individual responsibilities of agencies. Today, Outreach has evolved into a comprehensive and wide-scale program to:

- educate exporters on the controls and the important contribution export controls make to global security;
- develop and foster ongoing dialogue between DTCC and exporters so that they are inclined to report suspicious incidents and approaches they receive from overseas entities as well as within Australia; and
- raise awareness of the methods employed by states and terrorist groups to obtain controlled goods and technologies.

The relations that DTCC seeks to build with exporters are intended to ensure that Australia is not inadvertently exporting goods or technologies that may be diverted for use by terrorists or in a WMD program. This is particularly important for those goods and technologies whose control status falls just below the control threshold.

Through our Outreach activities we strive to establish a productive relationship with industry and academia. This is particularly important if export controls are to be presented as an important tool in countering proliferation and strengthening global security, rather than being a bureaucratic barrier that is inflexible and unwilling to accommodate the needs of exporters where appropriate.

While various approaches for delivering Outreach have been developed, one of the most effective ways of communicating the message on the controls has been through establishing contacts with peak industry bodies. By utilising the established networks of the peak industry bodies, DTCC has been able to communicate its message to a much wider audience far more quickly and with fewer resources.

The ever present challenge, however, remains in 'selling' the export controls and counter-proliferation message to industry and academia. When industry and research sectors are focussed on building markets and competing globally, it is often difficult to genuinely impress on them the importance of export controls and why they should be fulfilling their obligations, particularly when they recognise that this may impact upon future transactions.

The Australian experience in delivering Outreach has highlighted the important role of liaison between relevant government agencies in developing and progressing the program. A number of agencies within government may be influencing different aspects of an industry sector, such as control and monitoring of inbound movements of goods, border control and law enforcement, and industry regulators and facilitation agencies. These agencies may have well established programs and links with industry and academia and can provide valuable guidance and assistance in developing the program of Outreach.

In Australia there is still much work to be done in educating the community on export controls, including communicating the role and responsibilities of DTCC to other government agencies. Nonetheless, the efforts of the DTCC Outreach program to date is producing results in heightening awareness of export controls and counter-proliferation issues within the community, and is contributing to an increased level of compliance.

## THE ROLE OF INDUSTRY

Industry represents the frontline in the defence against the illicit procurement of sensitive goods and technologies. By knowing their customer, industry can be alerted to potential illicit procurement activity well before it comes to the notice of export administrators. In recognition of the significant role industry plays in the effective administration of the export controls, DTCC now works much harder at developing a cooperative relationship based on trust.

As well as targeting industry and academia for awareness raising, DTCC also looks to increase awareness of the export controls within other key areas. For example, freight-forwarders, peak industry bodies and banks. Each of these areas has been recognised as playing a crucial role in preventing proliferation. By raising awareness of the export controls within their respective spheres of influence and by referring suspicious procurement activity to enforcement authorities, each of these areas is contributing to the overall robustness of the system.

## SUMMARY

We should be under no illusions about the threats posed by the proliferation of conventional weapons and WMD. A failure by countries to act decisively to curtail the spread of these items could cost the international community dearly. We need to ensure we make full use of the existing counter-proliferation tools at our disposal and strive to be innovative in their application.

Over the next decade the battle to prevent the spread of conventional weapons and WMD will be about sharing information and disrupting and impeding supplies, as well as by applying the international non-proliferation framework. We must work together as we clearly have a shared responsibility to send the message to proliferators that they can no longer compromise global security.

As a final note, I would like to underscore the important role of industry in the effective administration of the export controls and encourage work with relevant industry and academic areas to ensure the inadvertent proliferation of sensitive goods and technologies does not occur.

## EXPERIENCES OF CAMBODIA IN IMPLEMENTING THE BIOLOGICAL WEAPONS CONVENTION

MAJOR YIN SOTHY\*

Participants, ladies and gentlemen; it is a matter of immense pride and honour for me to be here to present the experiences of the Kingdom of Cambodia in implementing the Biological Weapons Convention.<sup>1</sup> Before commencing, I would like to thank the Australian and Indonesian Governments for giving me this opportunity. This is the fifth meeting that Cambodia has joined, the first being in Finland in 1994, then in Melbourne, Australia in 2000, then in Bangkok, Thailand in 2004 and finally in Beijing, China in 2004.

Ladies and gentlemen; as you are aware, Cambodia is a non-industrial country, that is, an agricultural country, and it has never been affected by or used biological and/or chemical substances for the purpose of war or conflict. However, the figures from non-governmental organisations indicate that Cambodia utilises hundreds of tonnes of toxic chemical substances for agricultural purposes every year. Although these substances need to be utilised in a large scope in the agricultural field, the Ministry of Agriculture has banned the import of 116 items, which can seriously affect users, for example, Methamidophos, Parathion, Parathion Methyl, Crotoxyphos, and so on.

Cambodia signed the Chemical Weapons Convention<sup>2</sup> on 15 January 1993 in Paris. Cambodia has signed many other international conventions, and most recently, on 8 February 2005, the National Assembly of Cambodia ratified the Biological Weapons Convention strictly prohibiting the production, use, stockpiling and transportation of biological weapons. In relation to the prohibition of chemical weapons, Cambodia is committed to the purposes of the Chemical Weapons Convention and intends to work with the Organisation for the Prohibition of Chemical Weapons (OPCW) and other States Parties in their efforts to assist the world in eliminating this category of Weapons of Mass Destruction. Obviously, in the last three years, Cambodia has given its strong support to the European Union's Assistance on Curbing Small Arms and Light Weapons (EU ASAC), for example, by collecting and destroying over 16 000 small to medium arms and recently destroying 233 Ground to Air Missiles SIN 72 or 9K32M, which are sought by terrorists.

On 10 June 2004, an OPCW delegation led by Mr Huang Yu, Director of Foreign Relations of the OPCW Secretariat, visited Cambodia. The delegation recommended that Cambodia would benefit from becoming a member of the OPCW, which resulted

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\* Major Yin Sothy is Deputy Chief of the Chemical Office in the Chemical Protection Directorate, High Command Headquarters, Cambodia.

<sup>1</sup> *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, opened for signature 10 April 1972, 1015 UNTS 163 (entered into force 26 March 1975).

<sup>2</sup> *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction*, opened for signature 13 January 1993, 1974 UNTS 45 (entered into force 29 April 1997).

in the decision by Cambodia to ratify the Chemical Weapons Convention in July 2005. Regarding the recommendation, Cambodia will hold a diffusion forum and promote widely to the Royal Cambodia Armed Forces and others the need to be aware of and participate in the implementation of a ban on chemical and toxic substances and weapons. On 10 October 2004, the Ministry of National Defense formed a National Committee to cooperate with the OPCW, which is divided into four teams working on documenting and drafting law, financing, public relations and projecting. These teams will deploy to seven stations throughout Cambodia.

We are aiming to form a National Authority within the relevant ministries such as the Ministries of Agriculture, Industry, Health, Interior, and Commerce, led by the Ministry of National Defense, to implement to their fullest capacities the Biological Weapons Convention and the Chemical Weapons Convention.

Currently Cambodia lacks resources, especially human resources such as chemical experts, but we do hope that Cambodia will achieve the OPCW's goal, and work effectively with the OPCW's strong support. Cambodia also appreciates the OPCW's help in providing chemical law experts to help Cambodia to compile and create law for forming the National Authority; experts to train Cambodian officials; experts to work on a chemical database and analysis and verification of chemical substances; as well as resources to facilitate the monitoring and controlling of chemical substances and weapons.

Finally, I hope Cambodia will be an active State Party working closely with other States Parties in the region to implement the Biological Weapons Convention and Chemical Weapons Convention, as well as implementing any other program to eliminate terrorism, transnational crime and arms smuggling. Thank you.

## **EXPERIENCES OF THE LAO PEOPLE'S DEMOCRATIC REPUBLIC IN IMPLEMENTING THE BIOLOGICAL WEAPONS CONVENTION**

MAJOR FEUANGXAY MILAKONG\*

### INTRODUCTION

The Lao People's Democratic Republic (PDR) recognises and realises the severe danger of Weapons of Mass Destruction (WMD) such as nuclear, biological and chemical weapons, used in World War I, World War II and during the Iraq–Iran conflicts which brought a huge and vast amount of damage to humankind and our environment. In order to prevent any repetition of that horrible history, the international community has spent all its efforts to reduce and eliminate the WMD. The Lao PDR has done its best to contribute to the international community's efforts and aspirations in this respect. Based on this spirit, the Lao PDR has become a State Party to many international treaties and conventions, including the following:

- |   |                      |
|---|----------------------|
| 1. 1925 Geneva Protocol <sup>1</sup>                  | (signed 20 May 1989) |
| 2. Partial Test Ban Treaty <sup>2</sup>               | (ratified 1965)      |
| 3. Outer Space Treaty <sup>3</sup>                    | (ratified 1972)      |
| 4. Nuclear Non-Proliferation Treaty <sup>4</sup>      | (ratified 1970)      |
| 5. Sea-Bed Treaty <sup>5</sup>                        | (ratified 1971)      |
| 6. Biological Weapons Convention <sup>6</sup>         | (ratified 1973)      |
| 7. Environmental Modification Convention <sup>7</sup> | (ratified 1978)      |

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\* Major Feuangxay Milakong is a Liaison Officer for Australia–Laos Defence Cooperation in the Foreign Relations Department of the Ministry of National Defence, the Lao People's Democratic Republic.

<sup>1</sup> *Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare*, opened for signature 17 June 1925, 94 LNTS 65 (entered into force 8 February 1928).

<sup>2</sup> *Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water*, opened for signature 5 August 1963, 480 UNTS 43 (entered into force 10 October 1963).

<sup>3</sup> *Treaty on Principles Governing the Activities of States in the Exploration of Outer Space, Including the Moon and Other Celestial Bodies*, opened for signature 27 January 1967, 610 UNTS 205 (entered into force 10 October 1967).

<sup>4</sup> *Treaty on the Non-Proliferation of Nuclear Weapons*, opened for signature 1 July 1968, 729 UNTS 161 (entered into force 5 March 1970).

<sup>5</sup> *Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof*, opened for signature 11 February 1971, 955 UNTS 115 (entered into force 18 May 1972).

<sup>6</sup> *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, opened for signature 10 April 1972, 1015 UNTS 163 (entered into force 26 March 1975).

<sup>7</sup> *Convention on the Prohibition of Military or Any Hostile Use of Environmental Modification Techniques*, opened for signature 10 December 1976, 1108 UNTS 151 (entered into force 5 October 1978).

8. Convention on Certain Conventional Weapons<sup>8</sup> (signed 3 January 1983)
9. Chemical Weapons Convention<sup>9</sup> (ratified 1997)
10. Comprehensive Nuclear Test Ban Treaty<sup>10</sup> (ratified 2000)
11. IAEA Safeguards Agreement<sup>11</sup> (ratified 2001)

#### VIEW OF LAO PDR ON WMD AND BIOLOGICAL WEAPONS

The Lao PDR supports and cooperates with the international community's efforts to stem the proliferation of WMD, including biological weapons. We promote nuclear disarmament and enhancement of peaceful use of nuclear energy for the development and progress of humankind.

As one of the least developed countries in the world, the Lao PDR does not have the capacity to develop, produce, stockpile or use any kind of WMD, including biological weapons. We do not use nuclear energy as an energy source. The energy consumed by the country is mainly produced by hydropower, fuel, wood and coal.

#### KNOWLEDGE

Recently, the Ministry of Foreign Affairs of the Lao PDR and Ministry of Economy, Trade and Industry of Japan jointly organised a Seminar on Export Control, on 7 February 2005 in Vientiane. The main purpose of the seminar was to exchange lessons, knowledge and experiences between the Lao PDR and Japan relating to export control for sensitive materials/items, which could be used to produce WMD and biological weapons. There were many concerned ministries and agencies from the Lao PDR which were invited to participate in the Seminar: the Ministry of Commerce; the Ministry of Finance; the Ministry of Public Security; the Ministry of Justice; the Ministry of Industry and Handicraft; the Ministry of Health; the Ministry of National Defense; the Ministry of Communication, Transportation, Post and Construction; the National Environment and Technology Agency; the National Assembly; the Supreme Court; the Prosecuting Attorney; the Department of Economics (MOFA); and international organisations.

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<sup>8</sup> *Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects*, opened for signature 10 October 1980, 1342 UNTS 137 (entered into force 2 December 1983).

<sup>9</sup> *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction*, opened for signature 13 January 1993, 1974 UNTS 45 (entered into force 29 April 1997).

<sup>10</sup> *Comprehensive Nuclear Test Ban Treaty*, opened for signature 10 September 1996, UN Doc A/50/1027 (not yet in force).

<sup>11</sup> *Agreement between the Lao People's Democratic Republic and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons*, signed 22 November 1991, INF/CIRC/599 (entered into force 5 April 2001).

## CONCLUSION

As a Member State of the United Nations and a State Party to the Treaty of Bangkok<sup>12</sup> establishing the Southeast Asia Nuclear Weapons Free Zone (SEANWFZ), the Lao PDR is of the view that the total elimination of nuclear weapons, chemical weapons and biological weapons is the only absolute guarantee against the use or threat of use of such types of weapons. Only by doing so, we will be able to gradually build a world filled with peace and free from the threats of WMD, including biological weapons.

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<sup>12</sup> *Southeast Asia Nuclear Weapon Free Zone (SEANWFZ) Treaty of Bangkok*, opened for signature 15 December 1995, 25 ILM 635 (1996) (entered into force 27 March 1997).

## **EXPERIENCES OF THAILAND IN IMPLEMENTING THE BIOLOGICAL WEAPONS CONVENTION**

DR NAMCHAI CHEWAWIWAT\*

### INTRODUCTION

Thailand signed the Biological Weapons Convention (BWC)<sup>1</sup> on 17 January 1973 and submitted its ratification instrument to become the 38<sup>th</sup> State Party to the Convention on 28 May 1975. Since that time Thailand has undertaken various steps to ensure the implementation of the Convention's provisions. These measures have included the training of specialist personnel, the development and implementation of national preparedness and response plans, and the establishment of disease surveillance systems. Thailand has hosted a number of workshops and public seminars on BWC related issues and has developed several publications on biological and chemical weapons. The government has introduced various pieces of legislation in order to comply with its obligations and commitments under the BWC and is currently developing guidelines for the care of biotechnology.

### EXPERIENCE IN SECURITY OVERSIGHT OF PATHOGENS

As a BWC State Party, Thailand has conducted various activities aimed at the implementation of the provisions of the BWC, including the preparedness of personnel and responses to the possible deliberate use of biological agents. We have also established disease surveillance systems, based on the experiences of naturally occurring epidemics such as Severe Acute Respiratory Syndrome (SARS) and avian influenza. Activities include the collaboration between the National Security Council Agency and the United States Embassy of Thailand to host a training program on Postal Chemical/Biological Incident Management from 10–12 April 2002 at the United Nations Convention Centre (UNCC) in Bangkok. The program objective was to enhance bio-safety performance of the postal personnel on the handling of the postal materials, including overall planning and detailed protocols.

From 17–20 March 2003 the Ministry of Public Health hosted the Inter-Country Meeting on Biological, Chemical and Radiological Emergency Preparedness Strategies in Bangkok, Thailand. The participants were from the World Health Organization (WHO), and South-East Asian and Western Pacific Region countries. The Ministry of Public Health, in cooperation with the WHO, conducted a workshop on Guidelines to Assess National Health Preparedness and Response Programmes to the Deliberate Use of Biological and Chemical Agents and its field test during 15–26

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\* Dr Namchai Chewawiwat is a Researcher with the National Centre for Genetic Engineering and Biotechnology (BIOTEC), Ministry of Science and Technology, Thailand.

<sup>1</sup> *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, opened for signature 10 April 1972, 1015 UNTS 163 (entered into force 26 March 1975).

September 2003 at the Pathumwan Princess Hotel in Bangkok. The National Centre for Genetic Engineering and Biotechnology (BIOTEC) and the Ministry of Science and Technology, as the National BWC Secretariat, hosted the National Workshop on Biosecurity, from 27–28 September 2004 at the Thailand Science Park, Pathumthani. Experts from the Sandia National Laboratories in the United States were invited to give the lectures and share their experiences with the participants. Recently, the Centre for International Terrorism Prevention, Ministry of Defence, performed the Annual Training on International Terrorism Prevention from 17–19 December 2004.

## OVERVIEW OF THAILAND'S BIO-DEFENCE ACTIVITIES

In 2002 the Ministry of Public Health prepared a plan for addressing biological threats and used this as a guideline for national preparedness and responses to the possible deliberate use of biological and chemical agents. In addition, the surveillance systems, based on new and emerging diseases such as SARS and bird flu, are intended to apply in the event of a biological terrorist attack.

### A *Outreach and Awareness Raising Among the Scientific Community*

In addition to the establishment of guidelines to respond to potential biological threats, there has been a focus on outreach and awareness raising among the scientific community through public seminars and official publications. On 3 April 2001 BIOTEC hosted a public seminar entitled 'The Biological Weapons Convention and Thailand' at the Century Park Hotel, Bangkok, to raise public awareness and enhance the public's role in the prohibition of biological weapons for non-peaceful purposes. There were 127 participants who attended the seminar, from a diverse range of areas, including media, academics, and scientific researchers. In November 2001, BIOTEC, the National Security Council Agency and the Department of Industrial Plants, Ministry of Industry, co-hosted a public seminar entitled 'Protection from Biological and Chemical Threats' at the Century Park Hotel, Bangkok. In total, 305 participants attended the seminar. The Ministry of Public Health is planning to hold a public seminar on 'The Preparedness and Responses to the Deliberate Use of Biological and Chemical Agents' in June 2005.

Publications that are publicly available include a book titled *The Convention on Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction* (English–Thai) (2<sup>nd</sup> edition, 2001); a booklet titled *Biological Weapons* (2001); an occasional report named *Biological Weapons and Thailand* (2001); and a book titled *Protection from Biological and Chemical Weapons* (2003).

### B *The BWC and the Prevention of Bio-Terrorism*

#### 1 *Law and Regulation*

To comply with its obligations and commitments under the Biological Weapons Convention, Thailand has rigorously enacted and enforced several legal instruments:

- the *Customs Act 1926* (revised several times since first enacted);
- the *Export and Import of Goods Act 1979*
- the *Food Act 1979*

- the *Disease Control Act 1980*
- the *Drug Act 1987*
- the *Royal Decree Controlling the Exportation of Arms, Armaments and War Implements 1992*
- the *Hazardous Substances Act 1992 and 2001*
- the *Animal Disease Control Act 2001*
- the *Pathogens and Animal Toxins Act 1982 and 2001*.

## 2 *Code of Conduct for Scientists*

Several guidelines on various fields of biotechnology are presently being prepared. Some BWC related guidelines include the Biosafety Guidelines for Genetic Engineering and Biotechnological Experiments (2<sup>nd</sup> ed, 1993); the Ethics Guidelines for Scientists (2002); and the Biosafety Guidelines for Work Related to Modern Biotechnology or Genetic Engineering (2004).

## EXPERIENCES OF VIET NAM IN IMPLEMENTING THE BIOLOGICAL WEAPONS CONVENTION

LE HOAI TRUNG\*

### INTRODUCTION

I would like to express our delegation's appreciation to the Governments of Australia and Indonesia for jointly organising this Regional Workshop on the Biological Weapons Convention (BWC).<sup>1</sup> I believe that this Workshop will immensely facilitate the work undertaken by the BWC States Parties to review BWC implementation as we are going to have an opportunity, among other things, to look at the issue of banning biological weapons from different perspectives and share experiences gained in our national implementation of the BWC.

This paper will make remarks on Viet Nam's implementation of BWC, but before doing so, it will reiterate a number of Viet Nam's key positions on issues related to disarmament in general and Weapons of Mass Destruction (WMD) disarmament in particular.

### VIET NAM'S POSITION ON DISARMAMENT AND WMD

Viet Nam supports both the non-proliferation and complete elimination of Weapons of Mass Destruction. Viet Nam has ratified or acceded to all the major multilateral WMD instruments, namely the 1925 Geneva Protocol,<sup>2</sup> the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT),<sup>3</sup> the Biological Weapons Convention, the 1993 Chemical Weapons Convention,<sup>4</sup> the Nuclear Safeguard Agreement with the International Atomic Energy Agency (IAEA),<sup>5</sup> the Treaty on the

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\* Le Hoai Trung is Deputy Director of the Department of International Organisations, Ministry of Foreign Affairs, Viet Nam.

<sup>1</sup> *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, opened for signature 10 April 1972, 1015 UNTS 163 (entered into force 26 March 1975).

<sup>2</sup> *Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare*, opened for signature 17 June 1925, 94 LNTS 65 (entered into force 8 February 1928).

<sup>3</sup> *Treaty on the Non-Proliferation of Nuclear Weapons*, opened for signature 1 July 1968, 729 UNTS 161 (entered into force 5 March 1970).

<sup>4</sup> *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction*, opened for signature 13 January 1993, 1974 UNTS 45 (entered into force 29 April 1997).

<sup>5</sup> *Agreement between Viet Nam and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons*, INF/CIRC/376 (entered into force 23 February 1990).

Southeast Asian Nuclear-Free Zone (SEANWFZ)<sup>6</sup> and the 1996 Comprehensive Nuclear Test Ban Treaty.<sup>7</sup>

Viet Nam is of the view that non-proliferation and disarmament are closely linked with the maintenance of international security in the sense that achievements in the former are both aimed at and facilitate the promotion of the latter while the latter is an essential condition for significant and long-term progress in the former. Viet Nam shares the view that, most preferably, non-proliferation and disarmament regimes should be multilaterally negotiated and arrived at to ensure democracy, transparency in the disarmament process and the sustainability of these regimes. To serve the purposes of these regimes, we should guard against both non-compliance with the regimes and the abuse of compliance and verification issues for wrongful purposes. What is more, the operation of these regimes should not unduly hamper the application of scientific and technological achievements and scientific and technological international cooperation for peaceful purposes.

Viet Nam recognises the threat arising from the possibility of acquisition of WMD by terrorists and supports international and national measures which are aimed at promoting non-proliferation of WMD and disarmament and in conformity with international law.

#### VIET NAM'S IMPLEMENTATION OF THE BWC

Viet Nam is strongly committed to the obligation to refrain from providing any form of support to non-state actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery and has adopted and enforced laws to that effect. The State of Viet Nam itself is not engaged in any of the abovementioned activities.

Viet Nam is serious in establishing an effective legal framework to control all kinds of weapons, toxic, explosive, flammable and radioactive substances. The 1999 Penal Code of Viet Nam, for instance, covers this issue in a number of articles. These include Article 155 on the manufacturing, storage, transport and traffic in prohibited goods, Article 236 on the manufacturing, storage, transport, use and traffic in radioactive substances and Article 238 on the manufacturing, storage, transport, use and traffic in flammable and toxic substances. Current laws of Viet Nam prohibit all kinds of proliferation of nuclear, chemical and biological weapons and their means of delivery.

Nearly 40 bilateral agreements/treaties signed between Viet Nam and other countries also cover acts of manufacturing, acquiring, possessing, developing, transporting and using nuclear, chemical and biological weapons. Cooperation to prevent and combat crimes and terrorist activities relating to United Nations Security Council resolution 1540 (2004) is usually one of the priorities incorporated in these bilateral agreements/treaties.

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<sup>6</sup> *Southeast Asia Nuclear Weapon Free Zone (SEANWFZ) Treaty of Bangkok*, opened for signature 15 December 1995, 25 ILM 635 (1996) (entered into force 27 March 1997).

<sup>7</sup> *Comprehensive Nuclear Test Ban Treaty*, opened for signature 10 September 1996, UN Doc A/50/1027 (not yet in force).

Besides its mandate for chemical control, the Ministry of Industry is also the National Coordinating Agency responsible for the implementation of the Chemical Weapons Convention. Most of chemicals in Schedules 1, 2 and 3 which are categorised as toxic chemicals and precursors regulated in the Chemical Weapons Convention, have been added to the list of prohibited toxic chemicals for export and import (Annex 1/SD) issued with Circular 08/2001/TT-BCN on 14 September 2001 by the Ministry of Industry. No individuals are allowed to export and import these chemicals. Currently, the Ministry of Industry is coordinating with relevant agencies to draft a Government Decree on administrative punishments for acts violating the provisions in the Chemical Weapons Convention, which is submitted to competent government agencies for consideration. Consideration to criminalise prohibited acts in accordance with the Chemical Weapons Convention is being made to amend the Criminal Code.

The import of vaccines and bio-products are controlled by the Ministry of Health according to Circular 09/2001/TT-BYT of 21 May 2001 of the Ministry of Health. For temporary imports and re-exports, permission must be obtained from the Ministry of Trade. In fact, there has been no case of import and re-export involving nuclear, biological and chemical weapons and their means of delivery.

Decision No 815/2001/QĐ-BTM issued on 1 August 2001 by the Ministry of Trade on the pilot implementation of container trans-shipment services at Ben Nghe Port, Ho Chi Minh City prohibits trans-shipments consisting of weapons, ammunition, explosives, military technical equipments and toxic chemicals contained in the list of prohibited toxic chemicals for import and export.

For goods in transit, all transit agreements between Viet Nam, Cambodia and the Lao People's Democratic Republic have provisions that forbid transit of toxic chemicals and radioactive substances. In case the transit goods are arms, ammunition, explosives and military equipment for national defence and security, there must be licenses from the Ministry of Trade of the transit country based on the written request from the Trade Minister of the country requesting the transit license. The Viet Nam–China transit agreement forbids transit of goods that are subject to export and import prohibitions as regulated by each country; accordingly, nuclear, chemical and biological weapons and their means of delivery are subject to transit prohibition.

In conclusion, I wish to reaffirm Viet Nam's willingness to work with other countries inside or outside the region to consolidate the non-proliferation and disarmament process. Viet Nam is determined to stand by its international commitments and recognises the constant need to strengthen its implementation capacity, especially in the context of the fast changing world conditions.

Thank you for your kind attention.

## **EXPERIENCES OF MALAYSIA IN IMPLEMENTING THE BIOLOGICAL WEAPONS CONVENTION**

DR ZALINI YUNUS, MS WONG MEE-CHOO  
AND DR R DEVAN K RAMU\*

### INTRODUCTION

In recent years, we have observed a growing concern over chemical and biological weapons. The modern weapons of war such as the atomic bomb, supersonic airplanes, atomic submarines and aircraft carriers are all horrendously expensive, technologically complex and require a large and sophisticated industrial capacity as well as a host of highly skilled scientists and engineers to produce and maintain. In contrast, the cost for biological and chemical weapons production is relatively cheap as it uses readily available commercial equipment and material, and can be managed by modestly trained scientists and technicians.

Recent incidents of bio-terrorism and acts of sabotage elsewhere in the world, such as the anthrax incidents in the United States in 2001, pose a grave risk to the general population and intentionally cause damage and unnecessary public alarm.

Malaysia supports the efforts by the international community to press for universal adherence to the Biological Weapons Convention (BWC)<sup>1</sup> and compliance with its provisions.

### MALAYSIA'S EXPERIENCE IN HANDLING BIOLOGICAL THREATS

Malaysia's past experiences in handling emerging biological threats has revealed that professional collaboration both domestically and externally contribute to great success. Inappropriate handling of a crisis situation related to biological threats coupled with the lack of coordination and application of risk communication would contribute negatively in terms of fatalities, greater economic loss and national morale.

In managing the Severe Acute Respiratory Syndrome (SARS), Malaysia has issued the World Health Organization (WHO) adapted national guidelines to be implemented in the post-outbreak period with the various stages of Alert, Enhanced Surveillance and Public Health Management. The possible outbreak of SARS in Malaysia would not be able to be resolved if one chose to act in isolation. In this

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\* Dr Zalini Yunus is a Senior Research Scientist with the Malaysian Science and Technology Research Institute for Defence (STRIDE); Ms Wong Mee-Choo is the Principal Assistant Director of the UN and Disarmament Section, Ministry of Foreign Affairs, Malaysia; and Dr R Devan K Ramu is Principle Assistant Director in the Disease Control Division, Ministry of Health, Malaysia.

<sup>1</sup> *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction*, opened for signature 10 April 1972, 1015 UNTS 163 (entered into force 26 March 1975). Malaysia signed the BWC on 10 April 1972 and ratified it on 6 September 1991.

regard, Malaysia has been supportive of the efforts made by international networks such as the WHO, the World Organisation for Animal Health (OIE), and the Food and Agriculture Organization (FAO) to strengthen international surveillance and detection of infectious diseases affecting humans, animals and plants. Malaysia will continue to cooperate closely with these international networks in the future. Malaysia believes that these organisations within their respective mandate could also contribute towards realisation of BWC objectives.

### MANAGING BIOLOGICAL THREATS

The management of biological threats has been taken into a new level where there has to be anticipatory preparedness in handling and mitigating these deliberate criminal acts. In view of this scenario, we have put in place over the years various measures for this purpose, and will continue to strengthen them to meet present and future challenges. These include having in place:

- a sensitive, infectious disease surveillance program which is needed not only to keep known diseases at bay but also to recognise any new disease threats that may emerge;
- a practical, logistical and emergency response plan;
- an efficient infectious disease outbreak response team comprised of medical, public health and support personnel;
- effective communication and networking at all levels with the various sectors, Ministries and collaborative partners both locally and internationally; and
- adequate and up-to-date laboratory diagnostic capacity to support the early recognition, detection and control of biological threats, especially those posed by new and re-emerging infectious diseases.

We are aware that harmful organisms may hitchhike on a variety of goods. Malaysia therefore conducts regular programs to increase public awareness and to ensure that the public are informed and educated about the danger of the introduction of new diseases, to recognise and to report to authorities accordingly if there is a suspicious incident. As a member of the WHO, FAO, OIE and the International Plant Protection Convention (IPPC),<sup>2</sup> Malaysia is obliged to report any disease occurrence and emergency to these international organisations on a monthly, quarterly and yearly basis.

Currently, Malaysia does not have a specific law that deals solely with the issue of biological agents and toxins and to implement its obligations under the BWC. However, legislative provisions that are being utilised for the purpose of implementing Malaysia's obligations under the BWC may be found in the Penal Code, the *Arms Act*, the *Custom Act*, the *Prevention and Control of Infectious Disease Act*, the *Plant Quarantine Act*, the *Occupational Health and Safety Act* and the *Mutual Assistance in Criminal Matters Act*. An Inter-Agency Working Group has been established to study whether these provisions are sufficient or inadequate for Malaysia to meet obligations under the BWC. Follow-up measures will be undertaken

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<sup>2</sup> *International Plant Protection Convention*, opened for signature 6 December 1951, 150 UNTS 67 (entered into force 3 April 1952).

subject to the findings (ie to strengthen the present provisions in the various Acts or to promulgate new laws).

Malaysia has also established a national committee which will study the need to have a coordinated, integrated emergency response to outbreak as a result of chemical, biological, radiological or nuclear weapons. Once this national system is established, simulation exercises will be conducted regularly to enable personnel at all levels to fully understand their respective roles and to enhance their capabilities in managing a disaster situation effectively.

In addition to this, the Ministry of Health in Malaysia is undertaking a review of the progress and development of its crisis preparedness plan during the 8<sup>th</sup> Malaysian Plan (2001–05) and the 9<sup>th</sup> Malaysia Plan (2006–10).

Besides enhancing its national management system to address the biological threats, Malaysia also collaborates with ASEAN+3 for strengthening the surveillance of new and emerging disease in the region. In this regard, Malaysia undertakes the ASEAN project on Strengthening Laboratory Capacity and Quality Assurance for Disease Surveillance.

## CONCLUSION

Malaysia maintains its conviction that the BWC is essential for the maintenance of international and regional peace and security. Therefore, Malaysia is committed to undertake all possible efforts to fulfil its obligations under the Convention.