

# 15. Multilateral weapon-related export control measures

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## I. Introduction

New developments in multilateral export control occurred in 1994. For example, in December the European Union (EU) approved the text of a regulation which establishes a regime for the control of exports of goods which may have military as well as civilian uses, and during the year more states joined the regimes. In February 1995 a different group of states continued discussions on a new forum to replace the Coordinating Committee on Multilateral Export Controls (COCOM), which was dissolved in March 1994.

This chapter summarizes the debate on multilateral export control. This section looks specifically at the recent evolution of multilateral export control organizations or regimes.<sup>1</sup> Sections II–VI examine each regime in turn, and section VII discusses the schools of opinion on the utility of the regimes.

Table 15.1 lists the members of six regimes and shows that participation in multilateral export control is a highly concentrated activity. In 1994 only 33 states participated actively in multilateral weapon-related export control regimes.<sup>2</sup> While the membership of the various regimes is not yet identical, it has gradually become more harmonized in recent years.

Each regime listed in the table has or had a different focus. The COCOM embargo sought to prevent exports that could contribute to the military potential of a list of target countries. The Zangger Committee and the Nuclear Suppliers Group (NSG) try to restrict exports that could contribute to the

<sup>1</sup> A form of export control frequently used in recent years has been the arms embargo or wider trade embargo. Controls of this type are excluded from consideration in this chapter as they are specific responses to a particular crisis rather than general features of foreign and security policy.

<sup>2</sup> The groups described in this chapter do not all call themselves regimes. However, they fall within the definition of a regime offered by Stephen Krasner: a set of 'implicit or explicit principles, norms, rules and decision-making procedures around which actors' expectations converge in a given area of international relations'. Krasner, S. (ed.), *International Regimes* (Cornell University Press: Cornell, N.Y., 1983), p. 2. There may be states which share the principles and norms of one or more multilateral regime and which have national laws and regulations reflecting them without being members. Other countries may share the principles and norms without having national laws and regulations. For example, after the meeting between US President Bill Clinton and Indian Prime Minister P. V. Narasimha Rao in Washington, a US official commented: 'we agree on goals on nonproliferation. We do not entirely agree on means'. 'Rao proposes no-first-use N-accord', *Asian Recorder*, 11–17 June 1994, pp. 24017–20.

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**Table 15.1.** Membership of multilateral weapon-related export control regimes, as of 1 January 1995

State	COCOM <sup>a</sup> 1950	Zangger Committee 1974	NSG <sup>b</sup> 1978	Australia Group <sup>c</sup> 1985	MTCR <sup>d</sup> 1987	EU dual-use regulation 1994
Argentina			X	X	X	
Australia	X	X	X	X	X	
Austria		X	X	X	X	X
Belgium	X	X	X	X	X	X
Bulgaria		X	X			
Canada	X	X	X	X	X	
Czech Republic		X	X	X		
Denmark	X	X	X	X	X	X
Finland		X	X	X	X	X
France	X	X	X	X	X	X
Germany	X	X	X	X	X	X
Greece	X	X	X	X	X	X
Hungary		X	X	X	X	
Iceland				X	X	
Ireland		X	X	X	X	X
Italy	X	X	X	X	X	X
Japan	X	X	X	X	X	
Luxembourg	X	X	X	X	X	X
Netherlands	X	X	X	X	X	X
New Zealand			X	X	X	
Norway	X	X	X	X	X	
Poland		X	X	X		
Portugal	X	X	X	X	X	X
Romania		X	X			
Russia		X	X			
Slovakia		X	X	X		
South Africa		X	X		<i>e</i>	
Spain	X	X	X	X	X	X
Sweden		X	X	X	X	X
Switzerland		X	X	X	X	
Turkey	X					
UK	X	X	X	X	X	X
USA	X	X	X	X	X	

*Note:* The years in the column headings indicate when the regime was created. Not all these regimes are open to global membership; see the sections on each regime below.

<sup>a</sup> The Co-ordinating Committee on Multilateral Export Controls. Membership is as of Mar. 1994, when COCOM was dissolved, although the COCOM control lists will be valid for these states in their national regulations pending agreement on a follow-on forum.

<sup>b</sup> The Nuclear Suppliers Group.

<sup>c</sup> The EU Commission is represented as an observer.

<sup>d</sup> The Missile Technology Control Regime.

<sup>e</sup> South Africa will join the MTCR in 1995.

acquisition of nuclear weapons by non-nuclear weapon states (NNWS). The Australia Group aims to limit the transfer of chemical weapon precursors, equipment used in the production of chemical and biological weapons, and biological warfare agents and organisms. The Missile Technology Control Regime (MTCR) seeks to limit the spread of delivery systems other than manned aircraft with a range of 300 km or greater that are capable of delivering nuclear, biological and chemical (NBC) weapons.

The issue of export controls has occupied an important place in multilateral diplomacy for some time. However, the evolution of export controls has recently been affected by the new international environment. Several questions that are central to the export control debate have taken on new implications: What is the role of technology in international security after the cold war? What sort of political alignments will emerge to replace the antagonistic bipolar security system? How can arms control address current international security issues?

By joining multilateral regimes, governments agree that some national objectives can best be achieved through joint action. However, the regimes are multinational but not transnational; that is, states take independent action, collaborating only on specific measures to achieve certain objectives. The administrative arrangements of the multilateral groups reflect this by seeking consensus rather than taking decisions on collective action. There may be prior consultation on a given export, but the decision to approve it is taken and implemented by national authorities on a case-by-case basis. All the members of a regime must therefore have national legislation or regulations and administrative and enforcement agencies.

In the case of COCOM this generalization needs to be qualified in that the members agreed to a total embargo on the transfer of given items to given countries. Governments then asked their COCOM partners to grant case-by-case exceptions to the embargo. Exceptions were granted by consensus: a single member could block a given transfer by withholding consent to the request for exception. However, this blocking power had to be used carefully. Governments which took a request for an exception to COCOM had already made a national decision that the transfer was appropriate. If the COCOM decision was that they could not go ahead, there was inevitably resentment.<sup>3</sup>

None of the other regimes operates an embargo principle; they start from the premise that trade is legitimate under specific conditions. Here a qualification is required for the MTCR, which differentiates between the treatment given to items in different parts of the Equipment and Technology Annex to the Guidelines for Sensitive Missile-Relevant Transfers. For the complete systems and major sub-systems listed in category I of the Annex, there is a 'presumption to deny' transfer requests which has the effect of a national

<sup>3</sup> See Hoekema, J., 'Netherlands policy on non-proliferation: general outlook and perspectives', eds S. Mataija and L. Bourque, *Proliferation and International Security: Converging Roles of Verification, Confidence-Building and Peacekeeping* (Centre for International and Strategic Studies, York University: Toronto, 1993). The informal nature of COCOM meant that any government could withdraw from it with immediate effect if an issue was seen as being of sufficient importance.

embargo.<sup>4</sup> This is not true for items in the dual-use equipment part of the Annex.

Each of the regimes creates a forum for consultation and information exchange between partners. Governments may provide each other with information about cases of licence denial, individuals or companies of concern, or possible NBC or missile programmes of concern.

Regime behaviour applies to specific items. In the case of the NSG, equipment is defined in a list of nuclear-related dual-use equipment and materials and related technology. The Australia Group applies three lists of CW precursors, biological agents and dual-use equipment. The MTCR has agreed the Equipment and Technology Annex, while COCOM operated three lists—the International Atomic Energy List, the International Munitions List and the International Industrial List. Although COCOM was dissolved in 1994, its members agreed to maintain these lists and apply them on a global basis through their national regulations pending the formation of a follow-on forum. The follow-on forum will apply two separate product lists—one for conventional arms and one for dual-use technologies—developed from COCOM's International Industrial List and International Munitions List. The EU Regulation on the Control of Exports of Dual-Use Goods from the Community is a document issued by the European Council but containing a series of annexes developed under the Common Foreign and Security Policy as defined in the 1992 Maastricht Treaty.<sup>5</sup>

## II. Nuclear export controls

Article III, paragraph 2 of the 1968 Non-Proliferation Treaty (NPT) obliges parties to undertake 'not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to [IAEA] safeguards'.<sup>6</sup> However, as the International Atomic Energy Agency (IAEA) is involved here only through administering safeguards in the importing state, it is up to the exporters themselves to interpret and implement Article III.<sup>7</sup> In particular the ambiguity in the phrase 'equipment or material especially designed or prepared for the processing, use

<sup>4</sup> The presumption to deny is not always applied to regime partners. The transfer of Trident missiles from the USA to the UK has not been affected by the MTCR Guidelines, and other exceptions have been made for transfers between regime members. See also section IV in this chapter.

<sup>5</sup> For the Maastricht Treaty provisions on a Common Foreign and Security Policy, see *SIPRI Yearbook 1994* (Oxford University Press: Oxford, 1994), appendix 7A, pp. 251–57. See also section V and footnote 97 in this chapter.

<sup>6</sup> For the text of the NPT, see Goldblat, J., *SIPRI, Agreements for Arms Control: A Critical Survey* (Taylor & Francis: London, 1982), pp. 172–74.

<sup>7</sup> For more details on this and the following in this section, see *SIPRI, Safeguards Against Nuclear Proliferation* (Almqvist & Wiksell: Stockholm, 1975), pp. 17–23; Fischer, D. and Szasz, P., ed. J. Goldblat, *SIPRI, Safeguarding the Atom: A Critical Appraisal* (Taylor & Francis: London, 1985), pp. 101–103; and Nuclear Energy Agency (NEA), *The Regulation of Nuclear Trade: Non-Proliferation–Supply–Safety*, vol. 1, *International Aspects* (Nuclear Energy Agency, OECD: Paris, 1988).

or production of special fissionable material' needed clarification. Taking up this task as well as leading the international effort to implement export controls on technology and materials which may be useful for a nuclear weapon programme are in the main carried out by two groups—the Zangger Committee and the NSG.

### **The Zangger Committee**

The first important multilateral instrument for control of nuclear technology was put in place by the Nuclear Exporters Committee, known as the Zangger Committee, which was formed in 1971 by concerned NPT states parties under the chairmanship of Claude Zangger. In 1974 the members of the Committee informed the IAEA Director General that they had agreed on a 'trigger list' of categories of equipment or material<sup>8</sup> which would, if exported to a NNWS not a party to the NPT, trigger the application of IAEA safeguards on 'the source or special fissionable material produced, processed or used in the equipment or material in question'.<sup>9</sup>

As a condition of supply, the recipient state must agree not to divert such material to nuclear weapons or other explosive devices. In addition, it is required that the importing country provide satisfactory assurances, in the event of re-export to another NNWS not a party to the NPT, that safeguards would also be applied in the country receiving the re-export.<sup>10</sup>

Items on the original trigger list included nuclear reactors and specified equipment, including pressure vessels, fuel-charging and -discharging machines, control rods, pressure tubes, zirconium tubes and primary coolant pumps. Exports of deuterium and heavy water exceeding specific amounts, nuclear-grade graphite, reprocessing plants and equipment designed or prepared for them, fuel fabrication plants and equipment (not including analytical instruments) designed or prepared for uranium isotope separation were also included.<sup>11</sup> The latest clarification of the trigger list—concerning plants for the production of heavy water, deuterium and deuterium compounds and equipment especially designed and prepared therefor—was made in 1992.<sup>12</sup>

### **The Nuclear Suppliers Group**

After initial consultations in 1974 between the UK, the USA and the USSR on the desirability of further coordinating export policy and with increased con-

<sup>8</sup> The communications received from members regarding the export of nuclear material and of certain categories of equipment and other material, dated 22 Aug. 1974, together with attachments: Memorandum A, Memorandum B (containing the trigger list and a statement of the main principles for granting export and retransfer authorizations) and an Annex (clarifying items on the trigger list) were reproduced in IAEA document INFCIRC/209, 3 Sep. 1974.

<sup>9</sup> INFCIRC/209 (note 8), Memorandum B, para. 1.

<sup>10</sup> INFCIRC/209 (note 8), Memorandum B, para. 5.

<sup>11</sup> INFCIRC/209 (note 8), Memorandum B, para. 2.

<sup>12</sup> Periodic updates of the trigger list have been made since it was first drawn up, published in IAEA documents INFCIRC/209/Mods. 1, 2, 3 and 4 and consolidated in INFCIRC/209/Rev.1. The latest clarification appears in IAEA document INFCIRC/209/Rev.1/Mod.1., May 1992.

cern over the transfer of nuclear technology resulting from the explosion of a nuclear device by India that year, the NSG—also known as the London Club and now including all the members of the Zangger Committee plus New Zealand and Argentina—met from 1975 to 1978. In part at least, a major reason for creating the NSG was in order to include France, a major nuclear supplier and at the time not a party to the NPT and therefore not then a member of the Zangger Committee.<sup>13</sup>

In early 1978, using a procedure similar to that adopted by the Zangger Committee, all the countries involved communicated to the Director General of the IAEA that they would abide by principles which had been agreed in 1977—the Guidelines for the Export of Nuclear Material, Equipment or Technology (the so-called London Guidelines for Nuclear Transfers).<sup>14</sup> The Guidelines placed more stringent requirements<sup>15</sup> on nuclear exports than the Zangger Committee list and included requirements for assurances of non-explosive use on the part of recipients, safeguards as well as the control of retransfer. They also went beyond the boundaries of the NPT, covering transfers to all NNWS.

The three basic principles of the London Guidelines are: (a) that transfer of items on the trigger list should be authorized only after formal assurances from the government of the recipients which explicitly excludes uses which would result in a nuclear explosive device; (b) materials and facilities appearing on the trigger list should be ‘placed under effective physical protection to prevent unauthorised use and handling’; and (c) trigger list items should only be transferred when covered by appropriate IAEA safeguards.<sup>16</sup> The first and third of these are also part of the Zangger Committee list.

It is also stipulated that these three requirements should also apply to facilities for reprocessing, enrichment or heavy-water production which utilizes technology ‘directly transferred from the supplier or derived from transferred facilities, or major critical components thereof’. In addition, the transfer of any such facilities, major critical components thereof, or related technology requires that IAEA safeguards also apply to any facilities of the same type which may be constructed and that a safeguards agreement allow the IAEA to apply safeguards to facilities identified as using transferred technology.<sup>17</sup>

Nuclear suppliers are urged to exercise restraint in transferring sensitive facilities, technology and weapon-usable materials.<sup>18</sup> This has generally been interpreted to mean no transfer of such sensitive items, the single exception to this rule being the sale of a heavy water plant to Argentina by a Swiss firm in a controversial deal in 1980.<sup>19</sup> A supplier nation must also be informed if an

<sup>13</sup> Carnahan, B. M., ‘Export law and policy of the emerging nuclear suppliers: a basis for cautious optimism’, *Eye on Supply*, no. 5 (fall 1991), p. 67.

<sup>14</sup> NEA (note 7), p. 79; and Timerbaev, R., ‘A major milestone in controlling nuclear exports’, *Eye on Supply*, no. 6 (spring 1992), p. 58. The original London Guidelines were published by the IAEA in 1978 and the most recent update can be found in INFCIRC/254/Rev.1/Part 1/Mod.3, Nov. 1994.

<sup>15</sup> Strulak, T., ‘The Nuclear Suppliers Group’, *Nonproliferation Review*, vol. 1, no. 1 (fall 1993), p. 2.

<sup>16</sup> The London Guidelines (note 14), paras. 2, 3 and 4.

<sup>17</sup> The London Guidelines (note 14), para. 6.

<sup>18</sup> The London Guidelines (note 14), para. 7.

<sup>19</sup> Goldblat, J., *The Non-Proliferation Treaty: How to Remove the Residual Threats*, UNIDIR Research Paper no. 13 (United Nations: New York, 1992), p. 14; and Timerbaev (note 14), pp. 58–59.

enrichment facility or technology therefor is to be operated in such a manner as to produce uranium enriched to greater than 20 per cent uranium-235; this applies as well to facilities based on such supplied technology.<sup>20</sup>

There is also a prior-consent clause calling on suppliers and recipients to agree to arrangements for reprocessing, storage, alteration, use, transfer or retransfer of weapon-usable material which has either been transferred or derived from transferred facilities. It should be noted, however, that this is not a firm commitment—it is only stated that suppliers ‘should endeavour to include such provisions whenever appropriate and practicable’.<sup>21</sup> In addition, if transferred trigger list items or trigger list items derived from transferred facilities or derived with the help of such equipment or technology are retransferred, the same assurances must be given by the recipient as were required for the original transfer.<sup>22</sup>

Also included were measures to improve both the effectiveness and adequacy of safeguards and agreement on consultations in the case of violations in order to give an appropriate response. Unanimous consent is required if any of the London Guidelines is to be changed. An important omission in the Guidelines was the absence of the stipulation of full-scope safeguards. It is also important to take note of the fact that the Guidelines are implemented through national mechanisms of legislation and enforcement, leaving open the possibility of differences in interpretation and application. Provision for consultations to minimize such effects was included in the Guidelines but, in fact, other than for isolated bilateral consultations, the NSG did not meet again until 1991, by which time the Zangger trigger list had been systematically updated so that it had become more detailed than the NSG list.<sup>23</sup>

Cooperation between the Zangger Committee and the NSG has remained informal, but, given the nearly identical membership of the two organizations, questions as to the necessity of keeping two separate groups have been raised. While such issues have in fact been discussed, agreement has been reached that for some time to come the organizations will remain separate, largely because of the desirability of giving the option to those outside the control regimes to join either organization.<sup>24</sup>

### Recent initiatives

Increased concern with the trade in nuclear-related equipment—especially after the uncovering of the clandestine Iraqi nuclear programme and the realization that many of the NSG countries had exported much of the nuclear and technology and equipment which had been used<sup>25</sup>—led the then 26 members

<sup>20</sup> The London Guidelines (note 14), para. 8.

<sup>21</sup> The London Guidelines (note 14), para. 9.

<sup>22</sup> The London Guidelines (note 14), para. 10.

<sup>23</sup> Strulak (note 15), p. 3; and Timerbaev (note 14), p. 59.

<sup>24</sup> Strulak (note 15), p. 8.

<sup>25</sup> Simpson, J. and Howlet, D., ‘The NPT renewal conference: stumbling toward 1995’, *International Security*, vol. 19, no. 1 (summer 1994), p. 48; and Strulak (note 15), pp. 4–5.

of the Nuclear Suppliers Group to meet for the first time since 1978 in the Netherlands on 5–7 March 1991.

It was decided that dual-use technology controls should be addressed because of ‘steady revelations over the last two or three years of misuse of dual-use technology in nuclear weapons programs’.<sup>26</sup> At the follow-up NSG meeting in Warsaw in April 1992, the Group (then enlarged to 27 members with the joining of Austria in 1991 and with the Ukraine and the European Community present with observer status<sup>27</sup>) agreed on three important initiatives. The first would make the acceptance of comprehensive safeguards mandatory for countries receiving any new significant nuclear exports.<sup>28</sup> The second involved the control of dual-use technology, and specific guidelines on the export of a wide variety of dual-use items were laid out in the 1992 Guidelines for Transfers of Nuclear Related Dual-Use Equipment, Material and Related Technology (the so-called Warsaw Guidelines).<sup>29</sup>

The third outcome was the revision of the trigger list of controlled items which is much more specific in several areas.<sup>30</sup> These include fuel reprocessing plants and equipment especially designed or prepared for them and specific systems and components useful for isotope separation for uranium enrichment, including centrifuge and gaseous diffusion enrichment technologies.<sup>31</sup> The list is also much more specific regarding plants or equipment designed for the production of heavy water. The most recently published update of the list includes a detailed list of systems and equipment related to laser, chemical, aerodynamic and electromagnetic separation methods.<sup>32</sup>

Until the NSG Warsaw meeting, one of the important loopholes in the nuclear non-proliferation regime involved dual-use items. Problems in gaining cooperation among suppliers are exacerbated since the number of countries capable of supplying such equipment is large and suppliers of dual-use items are often not normally regarded as nuclear suppliers. With the easing of COCOM controls, new problems were added to the non-proliferation regime in the area of dual-use items in particular, as this list provided the legal basis for many countries to control many dual-use items, such as computers.<sup>33</sup> It was therefore a major turning-point in international control when the NSG agreed on the Warsaw Guidelines on Dual-Use Equipment.<sup>34</sup>

<sup>26</sup> Hibbs, M., ‘London Suppliers Club forms working group on dual-use’, *Nucleonics Week*, vol. 32, no. 11 (14 Mar. 1991), p. 4.

<sup>27</sup> Timerbaev (note 14), pp. 60, 65.

<sup>28</sup> An amendment to the NSG Guidelines to this effect was adopted at the next meeting in Lucerne in Mar.–Apr. 1993. *PPNN Newsbrief*, no. 22 (2nd quarter 1993), p. 5.

<sup>29</sup> Guidelines for Transfers of Nuclear Related Dual-Use Equipment, Material and Related Technology (the Warsaw Guidelines), IAEA document INFCIRC/254/Rev.1/Part 2, July 1992.

<sup>30</sup> Originally published in IAEA document INFCIRC/254/Rev.1/Part 1, July 1992; the most recently amended trigger list appears in INFCIRC/254/Rev.1/Part 1/Mod.2 (Apr. 1994).

<sup>31</sup> The amended trigger list (note 30), annex B, para. 3.

<sup>32</sup> The amended trigger list (note 30), annex B, para. 3.

<sup>33</sup> ‘Outlook on nuclear nonproliferation’, Special report, in *Nuclear Fuel*, vol. 16, no. 2 (21 Jan. 1991) p. 3.

<sup>34</sup> The Warsaw Guidelines (note 29). Items subject to control are listed in the Annex to the Guidelines.

With the stated objective of averting the proliferation of nuclear weapons, the NSG committed itself to the basic principle of refraining from transferring equipment, material or related technology, as identified in the Annex to the Warsaw Guidelines, either

- for use in a non-nuclear weapon state in a nuclear explosive or an unsafeguarded nuclear fuel cycle activity, or
- in general, when there is an unacceptable risk of diversion to such an activity, or when the transfers are contrary to the objective of averting the proliferation of nuclear weapons.<sup>35</sup>

While the Guidelines are to be implemented in accordance with national legislation and international commitments, for any prospective transfers of items listed in the Annex, procedures—including enforcement measures should violations occur—are to be established. Differences in the legal systems of the countries involved may in fact make it difficult to adopt standardized enforcement measures.<sup>36</sup>

Although not strictly required, several factors are to be taken into account when considering whether to carry out such transfers.<sup>37</sup> They include: (a) whether the state is a party to the NPT, the 1967 Treaty of Tlatelolco or similar nuclear non-proliferation agreement with an agreement on IAEA safeguards on all peaceful nuclear activities; (b) if not a party to any such international agreement, whether facilities associated with nuclear fuel cycle activity are not or will not be subject to safeguards; (c) whether items are appropriate to the stated end-use and whether this stated end-use is considered appropriate for the end user; (d) whether the item is to be used in a reprocessing or enrichment facility; and (e) demonstrated support for nuclear non-proliferation by the recipient and compliance with existing obligations in this area. Also to be considered are the previous activities of the recipient, in particular: (f) whether illegal or clandestine procurement activities have been engaged in; and (g) whether a transfer has not been authorized or whether any authorized transfer has been diverted for purposes inconsistent with the Guidelines.

Transfers are also to be conditional on specifications from the recipient regarding the end uses and end-use locations as well as assurance that neither transferred items nor their replicas will be used in any nuclear explosive activity or unsafeguarded nuclear fuel-cycle activity. For transfers to states not adhering to the Warsaw Guidelines, assurances must also be given that supplier consent will be secured before any transferred items or replicas are retransferred. The list of dual-use equipment includes 65 goods, in eight main categories.<sup>38</sup>

<sup>35</sup> The Warsaw Guidelines (note 29), para. 2.

<sup>36</sup> Müller, H., 'Reform of the system of nuclear export controls', eds H. Müller and L. A. Dunn, *Nuclear Export Controls and Supply Side Restraints: Options For Reform*, PPNN Study 4 (Mountbatten Centre for International Studies: Southampton, Oct. 1993), p. 12.

<sup>37</sup> The Warsaw Guidelines (note 29), para. 4.

<sup>38</sup> The 8 categories are: (a) industrial equipment (e.g., spin forming or flow forming equipment, vacuum induction furnaces); (b) materials (e.g., beryllium, high strength aluminium and maraging steel);

At the February 1993 meeting of the IAEA Board of Governors, a system of Universal Reporting was endorsed. IAEA member states were encouraged to provide 'relevant information relating to their exports and imports of nuclear material and exports of specified equipment and non-nuclear material' and were invited to 'provide information on their production of nuclear material and on their imports of specified equipment and non-nuclear material'.<sup>39</sup> Special forms were circulated for the purpose and, while participation in the Universal Reporting remains voluntary, it is hoped that all states will eventually subscribe.<sup>40</sup>

This type of information could be coupled with other data, including open-source data such as that from press and scientific reports and other data bases, possibly revealing important correlations.<sup>41</sup> A system of Universal Reporting, if utilized to its full potential, as well as increased inter-government exchange of sensitive information<sup>42</sup> could help to increase transparency in the area of nuclear-related trade.

Attention is now increasingly focused on the emerging nuclear suppliers and those not yet members of the NSG. They could hamper the effectiveness of the export controls now in place as well as the nuclear non-proliferation regime as a whole. Although China has engaged in serious dialogue with the NSG, it is unlikely to join either the NSG or the Zangger Committee in the near term. China remains the major source of nuclear supplies still not requiring stringent safeguards, but it holds to the belief that the NSG is discriminatory and that controls act as impediments to the transfer of technology necessary for the energy programmes of the developing countries.<sup>43</sup> Other suppliers—including Brazil, India, South Korea and most of the new states of the former Soviet Union—should all be encouraged to join the NSG. Efforts have been made to attract the newly independent states, in particular, into the NSG, but problems such as differences in views on the NSG between the nuclear sector and politicians and the absence of adequate legislation or an effective system for controlling nuclear trade have stood in the way.<sup>44</sup>

(c) uranium isotope separation equipment and components (e.g., rotor and bellows equipment, filament winding machines, super conducting solenoidal electromagnets, high-voltage direct current power supplies, electromagnetic isotope separators); (d) heavy water production plant related equipment (e.g., hydrogen-cryogenic distillation columns); (e) implosion systems development equipment (e.g., flash x-ray equipment, specialized instruments for hydrodynamic experiments); (f) explosives and related equipment (e.g., detonators and multipoint initiation systems); (g) nuclear testing equipment and components (e.g., high speed pulse generators); and (h) other (e.g., neutron generator systems, tritium, tritium compounds and mixtures).

<sup>39</sup> 'Strengthening the effectiveness and improving the efficiency of the safeguards system', IAEA document GC(XXXVII)/1073, 6 Sep. 1993, pp. 3–4.

<sup>40</sup> Seneviratne, G., 'IAEA Board OKs safeguards plan to record nuclear exports, imports', *Nucleonics Week*, 4 Mar. 1993, p. 18; 'Strengthening the effectiveness and improving the efficiency of the safeguards system' (note 39), p. 3; and *IAEA Bulletin*, no. 1 (1993), p. 40.

<sup>41</sup> Fainberg, A., *Strengthening IAEA Safeguards: Lessons from Iraq* (Center for International Security and Arms Control, Stanford University: Stanford, Calif., Apr. 1993), pp. 44–45.

<sup>42</sup> Strulak (note 15), pp. 9, 10.

<sup>43</sup> Weixing Hu, 'China's nuclear export controls: policy and regulations', *Nonproliferation Review*, vol. 1, no. 2 (winter 1994), pp. 5–6; and Hibbs, M., 'Moscow says it will now apply full-scope safeguards on exports', *Nuclear Fuel*, 12 Oct. 1992, p. 4.

<sup>44</sup> Strulak (note 15), p. 7.

Future success of nuclear export controls could be greatly enhanced if companies supplying items of possible concern were to exercise voluntary restraint in selling to countries suspected of attempting to develop nuclear weapons. The positive inducements for good behaviour being explored include streamlined export licensing and increased access to information from governments to firms which would be part of a 'certified exporters program'.<sup>45</sup>

The possibility of bringing those states which frequently act as intermediaries in the shipment of nuclear or related equipment into the export control system should not be overlooked. Related to this, while verification of end use may not be feasible for all exports, an examination could be made of the possibilities of implementing some form of end-use controls, perhaps on a select list of goods.<sup>46</sup>

In an important new development, annual plenary meetings of the NSG are now held to air concerns and make decisions. At the 1994 Madrid NSG meeting, lists of export licence denials were exchanged and discussions were held on rules for the transfer of nuclear materials and equipment to NPT parties which are none the less causes of proliferation concern—Iran, North Korea, Libya and Syria, as well as China, the only declared nuclear weapon state not an NSG member.<sup>47</sup>

### III. Chemical and biological export controls

#### Chemical export control

While it is difficult to detect and hinder illicit proliferation of weapons in any category, it is particularly difficult for chemical weapons (CW) owing to the nature of the chemicals, technology, equipment and know-how involved and because of their wide use in civilian industry. Detailed examples of production techniques for some of the major chemical weapons are readily available in the open literature, and many of them follow standard chemical engineering principles.<sup>48</sup> For example, mustard gas is fairly easy to produce and does not require very advanced chemical facilities, although production of nerve agents is more difficult since the materials used are highly corrosive and reactive. Nevertheless, 'multipurpose chemical plants capable of manufacturing organophosphorus pesticides or flame retardants could be converted in a matter of weeks or months to the production of nerve agents'.<sup>49</sup> Finally, many basic chemicals used in the production of CW are used extensively in commercial applications. A facility cannot be assumed to be engaged in illicit activities just because it has the capability to do so.

<sup>45</sup> Zimmerman, P. D., 'Proliferation: bronze medal technology is good enough', *Orbis*, vol. 38, no. 1 (winter 1994), p. 81; and Hart, K., 'Trade group urges more sharing of proliferation information', *Nuclear Fuel*, 5 July 1993, p. 15.

<sup>46</sup> Müller, in Müller and Dunn (note 36), pp. 11, 12.

<sup>47</sup> *Arms Control Today*, May 1994, p. 24; and Strulak (note 15), p. 8.

<sup>48</sup> US Congress, Office of Technology Assessment, *Proliferation of Weapons of Mass Destruction: Assessing the Risks*, OTA-ISC-559 (US Government Printing Office: Washington, DC, Aug. 1993), p. 36.

<sup>49</sup> US Congress, Office of Technology Assessment (note 48), p. 36.

*The Australia Group*

Since the beginning of this century there have been efforts to hinder the use of chemical weapons in war. However, measures to hinder the proliferation of chemicals, equipment and technologies used in the production of these weapons are more recent. The first real attempt to control the export of chemicals used in CW production was made in 1984, when confirmed CW use in the 1980–88 Iraq–Iran War was followed by the realization that Iraq’s CW capability had to a large extent been acquired from and aided by Western companies and industry.<sup>50</sup> In 1985 a group that came to be known as the Australia Group met for the first time with the intention of developing measures that would hinder further CW proliferation.<sup>51</sup>

The Australia Group originally consisted of 15 members, which developed a list of 40 chemicals to be placed under control. These were considered to be the most relevant precursors used in the production of sulphur mustard, tabun, sarin, soman, VX and psychochemicals.<sup>52</sup> The list was divided into two parts. The first part was the ‘core list’ of five chemicals (considered to be key precursors in the production of chemical weapons) whose export was to be put under control in all the Australia Group member states. The second part, the ‘warning list’, consisted of 35 chemicals perceived as dangerous but not as key precursors. These chemicals did not necessarily have to be put under control, but the list was to be distributed to the chemical industry to highlight the fact that they could be used in CW production. Although the Australia Group was aware that control would not entirely prevent CW proliferation, it would force countries seeking to acquire a CW capability to go further back in the production process and delay acquisition.

In 1984, even before the Australia Group was formed, progress towards a ban on CW production had moved from exploratory discussions to negotiations on a convention, regarded as the most effective control mechanism. Today the members have expanded their chemical precursor list to include 54 chemicals. In addition they have developed lists for the control of dual-use chemical manufacturing facilities and equipment and related technology.<sup>53</sup>

<sup>50</sup> See Robinson, J. P. P., ‘Chemical and biological warfare: developments in 1984’, SIPRI, *World Armaments and Disarmament: SIPRI Yearbook 1985* (Taylor & Francis: London, 1985), pp. 181–83; Robinson, J. P. P., ‘Chemical and biological warfare: developments in 1985’, SIPRI, *World Armaments and Disarmament: SIPRI Yearbook 1986* (Oxford University Press: Oxford, 1986), pp. 162–63; and Goose, S., ‘Armed conflicts in 1986, and the Iraq–Iran War’, *SIPRI Yearbook 1987: World Armaments and Disarmament* (Oxford University Press: Oxford, 1987), pp. 297–320.

<sup>51</sup> For discussions of the Australia Group (first known as the Brussels Club), see Robinson, J. P. P., ‘Chemical and biological warfare: developments in 1986’, *SIPRI Yearbook 1987* (note 50), p. 104; and Robinson, J. P. P., *Chemical and Biological Warfare Developments: 1985*, SIPRI Chemical & Biological Warfare Studies no. 6 (Oxford University Press: Oxford, 1986), p. 52.

<sup>52</sup> Mathews, R., ‘A comparison of the Australia Group List of chemical weapon precursors and the CWC schedules of chemicals’, *Chemical Weapons Convention Bulletin*, no. 21 (Sep. 1993), p. 1. The list was prepared at the Australia Group’s second meeting, in Sep. 1985 and was agreed upon at its May 1986 meeting.

<sup>53</sup> This list was developed on the initiative of the USA and finally agreed upon in 1990. For further information, see Robinson, J. P. P., ‘The Australia Group and the Chemical Weapons Convention’, Paper presented at Pugwash Meeting no. 186, 19th Workshop of the Pugwash Study Group on Chemical and Biological Warfare, 11–12 Jan. 1992, Geneva, Switzerland. The Australia Group lists have been developed from 1992. The BW lists are discussed below.

The Australia Group is an informal organization which cannot impose restrictions and export controls on its members. Any control maintained by a member country is voluntary and is implemented in accordance with its national legislation. The regime's effectiveness lies in its informality, which allows members to exchange information about their exports and export control experiences without having to declare their actions or the actions of others.

*The Chemical Weapons Convention*<sup>54</sup>

The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (CWC) was finalized in 1992 and opened for signature on 13 January 1993. By the end of 1994, 159 states had signed and 19 states had ratified the Convention.<sup>55</sup> The CWC will enter into force 180 days after the 65th ratification.

Several articles in the CWC deal with export control and restrictions on transfer. In Article I parties undertake never to 'develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone'.<sup>56</sup> Article II, paragraph 1, 'Definitions and Criteria', defines a chemical weapon as:

(a) Toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes;

(b) Munitions and devices, specifically designed to cause death or other harm through the toxic properties of those toxic chemicals specified in subparagraph (a), which would be released as a result of the employment of such munitions and devices;

(c) Any equipment specifically designed for use directly in connection with the employment of munitions and devices specified in subparagraph (b).

However, only the transfer of chemicals is controlled and monitored under the CWC. Article VI states that each party has the right to transfer chemicals for purposes not prohibited under the Convention,<sup>57</sup> and Article XI obliges parties to 'undertake to review their existing national regulations in the field of trade in chemicals in order to render them consistent with the object and purpose of this Convention'.<sup>58</sup> Article VII requires parties to 'in accordance with its constitutional processes, adopt the necessary measures to implement its obligation under this Convention'.<sup>59</sup>

The Annex on Chemicals contains lists of chemicals that are or will be placed under some kind of control or restrictions. These lists were negotiated

<sup>54</sup> The text of the Chemical Weapons Convention is reproduced in *SIPRI Yearbook 1993: World Armaments and Disarmament* (Oxford University Press: Oxford, 1993), appendix 14A, pp. 735–56.

<sup>55</sup> See also chapter 20 in this volume.

<sup>56</sup> CWC Article I, 'General obligations', para. 1(a).

<sup>57</sup> Purposes not prohibited under the Convention include, e.g., peaceful research, protective purposes, etc. For a full account of the purposes, see Article II, para. 9 of the Chemical Weapons Convention.

<sup>58</sup> CWC Article XI, para. 2(e).

<sup>59</sup> CWC Article VII, para. I.

and established primarily to 'trigger declaration obligations and verification measures with regard to those chemicals and facilities related to such chemicals'.<sup>60</sup> The Annex divides the chemicals into three schedules.

Schedule 1 chemicals are defined as posing a high risk to the 'object and purposes' of the Convention and have 'little or no use for purposes not prohibited under the Convention'.<sup>61</sup> These chemicals are considered as actual CW agents and nerve agent precursors for binary CW. Schedule 1 chemicals may not under any circumstances be transferred to any non-party, and only an aggregate amount of 1 tonne or less intended for research, medical, pharmaceutical or protective purposes may be transferred to parties. Each transfer must be preceded by a notification to the Technical Secretariat of the CWC by both the transferring and receiving state. Annual declarations are required for all Schedule 1 transfers, including the chemical named and structural formulae, the quantity acquired or transferred, the recipient and the purpose.<sup>62</sup>

Schedule 2 chemicals are considered to pose a significant risk to the 'object and purposes' of the Convention and are not 'produced in large commercial quantities for purposes not prohibited' under the Convention.<sup>63</sup> These chemicals are known to be used as key precursors in CW production and as toxic chemicals which can be used in the production of CW agents. The transfer of Schedule 2 chemicals is allowed to states not party to the CWC for the first three years after the CWC has entered into force. Thereafter, transfers will be allowed only to CWC parties. Transfers to non-parties require an end-use certificate stating that the chemical will only be used for purposes not prohibited under the Convention, that they are not to be retransferred and stating the end use. Further, the chemical type and quantity must be stated as well as the name and address of the end user.<sup>64</sup> Initial and annual declarations are required which include 'aggregate national data for the previous calendar year on the quantities produced, processed, consumed, imported and exported of each Schedule 2 chemical'.<sup>65</sup> Further, each facility producing Schedule 2 chemicals must make initial and annual declarations regarding each chemical above the declaration threshold, declaring the 'total amount produced, processed, consumed, imported and exported' by the facility for the previous calendar year.<sup>66</sup>

Schedule 3 chemicals are classified as those 'produced, stockpiled or used as chemical weapons' and which pose a risk to the 'object and purpose' of the Convention. They might also have been 'produced in large commercial quanti-

<sup>60</sup> Krutzsch, W. and Trapp, R., *A Commentary on the Chemical Weapons Convention* (Kluwer Academic Publishers: Dordrecht, 1994), p. 258.

<sup>61</sup> CWC Annex on Chemicals, A, para. 1.

<sup>62</sup> CWC Verification Annex, Part VI, 'Activities not Prohibited under this Convention in Accordance with Article VI', 'Regime for Schedule 1 Chemicals and Facilities Related to Such Chemicals', A. 'General Provisions', para. 1, 2, B. 'Transfers', paras 3-6.

<sup>63</sup> CWC Annex on Chemicals, A, para. 2.

<sup>64</sup> CWC Verification Annex, Part VII, C. 'Transfers to States not Party to this Convention', paras 31-32.

<sup>65</sup> CWC, Part VII, 'Activities not Prohibited under this Convention in Accordance with Article VI; Regime for Schedule 2 chemical and Facilities Related to such Chemicals', A. 'Declarations', para. 1.

<sup>66</sup> CWC, Part VII (note 65), A. 'Declarations', para. 8. For the initial declaration the same applies, but it shall then be made for the previous 3 calendar years.

ties for purposes not prohibited' under the CWC.<sup>67</sup> Transfers of Schedule 2 chemicals are not prohibited but can only take place to non-parties with an end-use certificate stating that they will only be used for purposes not prohibited under the Convention, that they will not be retransferred and giving the end use. The chemical type and quantity must be stated as well as the name and address of the end user. Initial and annual declarations are required, stating the 'aggregate national data for the previous calendar year on the quantities produced, imported and exported . . . as well as a quantitative specification of import and export for each country involved for each chemical involved'.<sup>68</sup> Each plant producing a Schedule 3 chemical must also make initial and annual declarations as to the approximate production of each chemical in the previous calendar year, or, 'in case of anticipated activities, anticipated for the next calendar year'.<sup>69</sup>

### *The CWC and the Australia Group*

With the completion and future entry into force of the CWC, the need for the Australia Group to continue its work is under discussion. Opponents of the Group feel that export controls contradict one of the basic principles of the CWC—the guarantee of unhampered trade and transfers which shall further the 'economic or technological development of States Parties, and international cooperation in the field of chemical activities'.<sup>70</sup> They thus want to disband the Australia Group as soon as the Convention enters into force. However, the members feel that they cannot abolish the regime unless they have verified that the CWC is functioning and can effectively prevent the proliferation of chemicals used in the production of CW. Further, the CWC does not regulate equipment and technology used in CW production—which the Australia Group does. The Australia Group has stated that they 'undertake to review, in the light of the implementation of the Convention, the measures that they take to prevent the spread of chemical substances and equipment for purposes contrary to the objectives of the Convention, with the aim of removing such measures for the benefit of States Parties to the Convention acting in full compliance with their obligation under the Convention'.<sup>71</sup> This statement facilitated conclusion of the CWC, and the Australia Group has begun its review of export control measures. This does not, however, mean that the Australia Group will be abolished. It has undertaken to review its measures only as regards CW chemicals and equipment, but, as mentioned above, the Australia Group has expanded its measures to encompass much more than that.

<sup>67</sup> CWC Annex on Chemicals, A, para. 3. These are known as dual-use chemicals.

<sup>68</sup> CWC, Part VIII, 'Activities not Prohibited under the Convention in Accordance with Article VI; Regime for Schedule 3 Chemical and Facilities Related to such Chemicals', A. 'Declarations', para. 1.

<sup>69</sup> CWC, Part VIII, (note 68) A. 'Declarations', para. 8.

<sup>70</sup> CWC Article XI, para. 1.

<sup>71</sup> Statement made on behalf of the Australia Group by the Representative of Australia, Ambassador Paul O'Sullivan, at the 629th Plenary Meeting of the Conference on Disarmament, CD document CD/1164, 7 Aug.1992.

*Recent developments*

At the May 1994 Australia Group meeting, the ‘continuing need for national measures to prevent civilian industry and traders from becoming unwitting contributors to CBW programs’ was stressed.<sup>72</sup> It was also stated that export licensing is consistent with and ‘actively supports’ the obligations and requirements under CWC Article I. Finally, Australia Group members were ‘keen to raise awareness about the importance of export licensing to support the global bans on chemical and biological weapons, and to encourage the adoption and implementation of appropriate national measures by all relevant countries’. It is clear that the Group will continue to declare the need for export controls to be an integral part of CW non-proliferation measures. The Group also emphasizes the link between export controls and the CWC.

Owing to the concerns of private industries about economic competitiveness, there has been a tendency to streamline CW export controls.<sup>73</sup> For example, although continuing to regulate dual-use goods used in the production of CW and other weapons of mass destruction, the USA has announced its intention to streamline US export controls to countries which abide by global CW non-proliferation norms.<sup>74</sup> The USA simultaneously urges countries to control their trade in dual-use goods with Iran<sup>75</sup> and has proposed granting \$2 260 000 to the new states of the former Soviet Union as aid for implementation of export controls.<sup>76</sup>

The harmonization of EU dual-use export controls may also have an impact on export controls related to chemicals, equipment and technology that can be used in the production of CW. In introducing the new Council Regulation on the Control of Exports of Dual-Use Goods from the Community, the EU abolished Regulation (EEC) no. 428/89 (1989), which controlled a list of eight chemicals for export.<sup>77</sup> The purpose seems to be to harmonize all export controls in one body of legislation. Although the list of goods under control is not available to the public, it is assumed that the chemicals listed in Regulation 428/89 are listed in the new Regulation. It is hoped that the list has been expanded and also contains dual-use CW technology and equipment.

<sup>72</sup> Australia Group, *Press Release*, Australia Group Meeting, Australian Embassy, Paris, 16–19 May 1994.

<sup>73</sup> See the discussion in Stock, T. and De Geer, A., ‘Chemical weapon developments’, *SIPRI Yearbook 1994* (note 5), pp. 321–22.

<sup>74</sup> *Wireless File*, ‘White House explains reforms in export control program’ (United States Information Service, US Embassy: Stockholm, 30 Mar. 1994), p. 23.

<sup>75</sup> Finnegan, P. and Hitchens, T., ‘U.S. fights dual-use technology flow to Iran’, *Defense News*, vol. 9, no. 8 (28 Feb.–6 Mar. 1994), p. 6.

<sup>76</sup> *Arms Control Today*, vol. 24, no. 1 (Jan./Feb. 1994), pp. 32–33.

<sup>77</sup> Article 22b of Regulation 428/89. See also section V in this chapter.

### Biological export control

The 1991 Persian Gulf War passed without the expected use of chemical or biological weapons by Iraq.<sup>78</sup> However, the inspections carried out by the United Nations Special Commission on Iraq (UNSCOM) in the aftermath of the war revealed that Iraq had actively pursued a biological and toxin warfare (BTW) programme. This raised general public awareness about the reality of BW proliferation.

The proliferation of BW agents and the technology to produce biological weapons is perceived as one of the most serious threats of the 1990s. Approximately a dozen countries are 'currently believed to possess or to be seeking biological and toxin weapons'.<sup>79</sup> The general perception is that it will be much easier to produce BW agents than to develop the munitions to deliver these agents effectively from the military point of view.<sup>80</sup> 'Although BTW agents are generally considered to be poor battlefield weapons because they are slow-acting and difficult to control, they might have some tactical utility for a narrow range of military operations in which immediate results are not required and the risk of exposing friendly forces is minimal'.<sup>81</sup>

Efforts to halt BW proliferation must take into consideration the following limitations and realities.

1. The 1972 Biological and Toxin Weapons Convention (BWC), in force since 1975, bans the development, production, stockpiling and transfer of BTW agents. The Convention was weakened from the outset by the impossibility of banning research on BTW agents for defensive or peaceful purposes and the absence of an effective international verification regime to ensure compliance.

2. The enormous and rapid developments in biotechnology and genetic engineering over the past two decades have spread capabilities throughout the world.<sup>82</sup> Biotechnology is regarded as a prerequisite for a 'third industrial revolution' from which many developing countries could benefit.

3. Much of the necessary know-how and technology in biotechnology are 'dual-use', with wide, legitimate application in the commercial fermentation and biotechnology industries.

4. Biotechnology and genetic engineering are information-intensive rather than capital-intensive, and much of this information is published in the open

<sup>78</sup> There are allegations of possible accidental releases of agents that might have caused the so-called Gulf War Syndrome, which affects some Persian Gulf War veterans, mainly from the USA. See also chapter 10 in this volume.

<sup>79</sup> Tucker, J. B., 'Lessons of Iraq's biological warfare programme', *Arms Control Today*, vol. 14, no. 3 (Dec. 1993), pp. 229–71; Stock, T., 'Chemical and biological weapons: developments and proliferation', *SIPRI Yearbook 1993* (note 54), p. 286; and Geissler, E., 'Biological weapon and arms control developments', *SIPRI Yearbook 1994* (note 5), pp. 713–38.

<sup>80</sup> US Congress, Office of Technology Assessment (note 48), p. 38.

<sup>81</sup> Tucker (note 79), pp. 229–71

<sup>82</sup> Bartfai, T., Lundin, S. J. and Rybeck, B., 'Benefits and threats of developments in biotechnology and genetic engineering', *SIPRI Yearbook 1993* (note 54), appendix 7A, pp. 293–305.

literature.<sup>83</sup> It is impossible to prevent the diffusion of weapon-relevant information and knowledge.

The dilemma today can be described as follows. In spite of the Convention, the importance of which is recognized, parties are confronted with a high degree of internationalization in the biotechnology and genetic engineering market. This market is characterized by an enormous flow of technology, know-how and material from North to South, and the industrialized countries realize that this flow carries with it the potential for BW proliferation. In addition, a growing opinion—led by some of the developing countries—opposes any further restrictions on technology and know-how transfer under the BWC. This strong opposition to future restrictions can be perceived as a lesson which these countries have learned from the CWC negotiations.

Bearing this in mind, a determined aggressor would certainly be able to achieve a BW capability within one to two years,<sup>84</sup> even if restrictions on transfers are individually applied by certain supplier countries.

The question is how concerned countries will be able to prevent BW proliferation given the nature of the problem. For the moment, export control initiatives must be regarded as the only tool to stop or to slow down BW proliferation. Supply-side measures are applied at the national level and through coordinated efforts such as those of the Australia Group. The number of countries that have incorporated specific BW control measures in their national legislation is increasing.<sup>85</sup>

The Australia Group has also increasingly focused upon the issue of export control with respect to BW agents, technology and equipment. From 1990 the Group discussed ways to warn industry and concerned governments about the danger of aiding BW proliferation.<sup>86</sup> In 1992 these efforts resulted in an agreed list of biological agents subject to export control, composed of a core and a warning list and a list of dual-use biological equipment for export control.<sup>87</sup>

In 1994 the core list contained 49 biological agents and the warning list 19 viruses, rickettsiae, bacteria, genetically modified micro-organisms and toxins. A second list, agreed in 1992, comprises 17 animal pathogens subject to export control; another list, agreed in 1993 and composed of a core and an awareness-raising list, contains 15 plant pathogens (bacteria, fungi, viruses and genetically modified micro-organisms). The three lists now cover human, animal and plant agents.

<sup>83</sup> US Congress, Office of Technology Assessment, *Technologies Underlying Weapons of Mass Destruction*, OTA-BP-115 (US Government Printing Office: Washington, DC, Dec. 1993), p. 85.

<sup>84</sup> Royal Society, *Scientific Aspects of Control of Biological Weapons*, Report of a Royal Society Group (Royal Society: London, July 1994), p. 50.

<sup>85</sup> *Worldwide Guide to Export Controls*, 1993/94 edn (Export Control Publications: Surrey, 1993). Examples of countries that improved existing legislation in 1994 are Russia, which in June introduced a new directive on control of BW-relevant material; Belgium; and the USA.

<sup>86</sup> de Briganti, G., 'West takes steps to curb biological weapon proliferation', *Defense News*, vol. 5, no. 26 (25 June 1990), p. 18.

<sup>87</sup> Stock, T., 'Chemical and biological weapons: developments and proliferation', *SIPRI Yearbook 1993* (note 54), p. 269.

The list of dual-use biological equipment contains items related to: (a) complete containment facilities at the P3 and P4 containment level,<sup>88</sup> (b) fermenters, (c) centrifugal separators, (d) cross-flow filtration equipment, (e) freeze-drying equipment, (f) equipment that incorporates or is contained in P3 or P4 (BL3, BL4, L3, L4) containment housing, and (g) aerosol inhalation chambers.<sup>89</sup>

Some members of the Australia Group already control the listed items on a national basis, and others are in the process of incorporating such controls. As outlined above, members do not collectively undertake any legally binding obligations: the purpose of their participation is to demonstrate their commitment to chemical and biological warfare non-proliferation. The Group has also committed itself to exploring ways of making the national measures undertaken by member states more effective and to discuss new measures.

#### IV. The Missile Technology Control Regime

The Missile Technology Control Regime was established in 1987 as an instrument for nuclear non-proliferation policy. The seven founding members produced the Guidelines for Sensitive Missile-Relevant Transfers, which in 1992 were expanded to include all ballistic and cruise missiles capable of delivering NBC weapons. The most recent Equipment and Technology Annex dates from November 1993.<sup>90</sup> The primary issues of concern to the MTCR partner countries have related to regime membership and to the relationship between the MTCR and other initiatives aimed at preventing the acquisition of cruise and ballistic missiles by countries of concern.

New members joining the MTCR must be able to carry out their obligations under the regime. However, this is not sufficient since it does not explain the denial of membership to Israel—which has export regulations and enforcement practices at least as efficient as those of many regime members.<sup>91</sup> There must also be an evaluation of the commitment of the joining state towards the wider goal of non-proliferation in specific areas. This includes an evaluation by regime members of the domestic acquisition programmes of the potential regime member. Since Israel's ballistic missile programmes are targets of

<sup>88</sup> 'P' stands for 'physical containment'. Biosafety levels (BL, formerly P1–P4) apply to work with biological agents and/or for genetic engineering; the standards are developed by organizations and institutions such as the World Health Organization (WHO), the National Institutes of Health (NIH) and the US Centres for Disease Control (CDC). Level 4 (L4) refers to the maximum containment laboratories and facilities with highly specialized architectural, sterilization and ventilation features for work with dangerous and/or exotic biological agents, including recombinants that pose a high individual risk of life-threatening disease for the laboratory worker, the community and the environment. In addition, L4 laboratories are usually equipped with safety cabinets to minimize further the risk that the laboratory worker or the environment is contaminated by the biological agents studied.

<sup>89</sup> *Export Licensing Measures on Material Used in the Manufacture of Chemical and Biological Weapons*, AG/May94/Press/Chair/11, May 1994.

<sup>90</sup> Information supplied in communications from the Norwegian and the Swedish ministries for foreign affairs, Mar. 1994.

<sup>91</sup> Statement of Richard A. Clarke, Assistant Secretary for Political-Military Affairs, US Department of State to the hearings on *Arms Trade and Nonproliferation in the Middle East* before the Subcommittee on Technology and International Security of the Joint Economic Conference, US Congress, 13 Mar. 1992 (US Government Printing Office: Washington, DC, 1993), p. 81.

multilateral export controls, it cannot become an MTCR member. Moreover, if Israel were to renounce its ballistic missile programmes, its nuclear programme and its refusal to join the NPT as a non-nuclear weapon state would still prevent membership of the MTCR.<sup>92</sup>

Efforts are under way to consider how the MTCR can reduce the extent to which it is identified with trade restriction and the perception that membership is confined to the states of the Organisation for Economic Cooperation and Development (OECD). Argentina and Hungary, neither of which are members of the OECD, are members of the MTCR. Speaking at the United Nations in late 1993, President Bill Clinton stressed the need for changes which would 'strengthen the principles of the [MTCR] by transforming it from an agreement among just 23 nations to a set of rules that can command universal adherence'.<sup>93</sup>

At the October 1994 MTCR plenary meeting in Stockholm, the discussion reflected this goal. The decision in principle to admit South Africa to the MTCR underlined both the numerical expansion of membership and wider geographical representation. The meeting also stressed the need to intensify contact with countries and regional bodies that are not MTCR participants but which share the goal of missile non-proliferation.<sup>94</sup>

## V. The EU Regulation on dual-use exports

The European Union Regulation is different from the other multilateral regimes discussed in this chapter. First, the EU is able to make decisions which are binding on all of its members—although it is not obliged to do so. Second, the EU is not a regime dedicated to the goal of non-proliferation but an international organization whose members have chosen to add cooperation in this area to the very broad spectrum of issues with which the organization deals.

The issue of cooperation in export regulation is dealt with by more than one of the different EU bodies. The European Parliament, the Commission of the European Union and the member states (through the Council of Ministers) have all been involved in the discussion. For the purposes of this section, the activities of the European Parliament are excluded.

The EU member states and the Commission tend to have different interpretations of community law and competence where questions of defence, foreign and security policy are concerned. Ultimately, while these interpretations could be tested in the European Court of Justice, in practice they are decided

<sup>92</sup> During the visit of Egyptian Foreign Minister Amr Moussa to Israel in Sep. 1994, Israeli Prime Minister Yitzhak Rabin made clear that Israel would not sign the NPT until the entire Middle East (including Iran, Iraq and Libya) were parties to a comprehensive regional peace settlement. See Pinkas, A. 'Israel won't sign nuclear non-proliferation pact', *Jerusalem Post* (international edn), 10 Sep. 1994, p. 2.

<sup>93</sup> President W. J. Clinton, 'Confronting the challenges of a broader world', address to the UN General Assembly, *US Department of State Dispatch*, vol. 4, no. 39 (27 Sep. 1993).

<sup>94</sup> Swedish Ministry for Foreign Affairs, 'Missile Technology Control Regime meets in Sweden', *Press Release*, 6 Oct. 1994.

by the political dynamics of the process of European integration.<sup>95</sup> In 1992 the question of whether and how the issue of arms exports should be brought into the competence of the EC (European Community) Commission was decided at the 1991 EC Maastricht summit meeting.<sup>96</sup>

The proposal that Article 223 of the 1957 Treaty of Rome—which gives national governments jurisdiction over questions of arms and military equipment—should be deleted from the Treaty was discussed and rejected. Moreover, the need for a coordinated EC arms transfer policy—which was agreed in principle at the first meeting of the Intergovernmental Conference (IGC) on Political Union in 1990—was considerably diluted in the Treaty on European Union.<sup>97</sup> Article J.1.3 of the Maastricht Treaty calls on the EU gradually to implement joint action ‘in the areas in which the Member States have important interests in common’. The definition of important interests is decided by the Council of Ministers. Arms export policy was identified as an area of common action and an *ad hoc* working group of EU members was set up under the Political Committee of the European Political Co-operation (EPC) in 1991.<sup>98</sup> The working group has apparently taken useful steps such as harmonizing national lists of items subject to UN or EU embargoes.<sup>99</sup>

The European Union is closely involved in the issue of trade in civilian goods with potential military applications. On 19 December 1994 an EU Regulation on the Control of Exports of Dual-Use Goods was accepted which took effect on 1 March 1995.<sup>100</sup> The Regulation was developed by the Directorate General of the Commission responsible for the Internal Market and Industrial Affairs, in close consultation with the competent authorities in the member states. The Commission stressed that the completion of the internal market depended to some extent on joint export controls at the perimeter of the Union.

Prior to full implementation of the Regulation, EU members retain national controls on both dual-use and military goods transferred to other EU states. In the Single Market, controls on dual-use goods could be justified only if there were a risk that items transferred to another EU member would be re-exported

<sup>95</sup> Öberg, U., *Om EG-rätten, medlemsstaternas försvarsindustri och nationella säkerhetsintressen* [EC law, defence industries of the member states and national security interests], FOA Report A 10046-1.3, July 1993, pp. 78–79 (in Swedish).

<sup>96</sup> The evolution of the debate on export control in the EC can be followed in Courades Allebeck, A., ‘The European Community and arms export regulations’, ed. I. Anthony, SIPRI, *Arms Export Regulations* (Oxford University Press: Oxford, 1991); Bauer, H., ‘Institutional frameworks for integration of arms production in Western Europe’, eds M. Brzoska and P. Lock, SIPRI, *Restructuring of Arms Production in Western Europe* (Oxford University Press: Oxford, 1992); and Courades Allebeck, A., ‘The European Community: from the EC to the European Union’, ed. H. Wulf, SIPRI, *Arms Industry Limited* (Oxford University Press: Oxford, 1993).

<sup>97</sup> The Treaty on European Union—known as the Maastricht Treaty—was agreed on 11 Dec. 1991, signed on 7 Feb. 1992 and entered into force on 1 Nov. 1993. It is reproduced in *Europe*, document no. 1759/60, 7 Feb. 1992.

<sup>98</sup> Eavis, P., ‘EC Regulations’, ed. J. Thurlow, *Worldwide Guide to Export Controls* (Export Control Publications: Chertsey, 1994).

<sup>99</sup> *Arms and Dual-use Export Controls: Priorities for the European Union* (Saferworld: Bristol, June 1994), p. 9.

<sup>100</sup> *Atlantic News*, 5 Jan. 1995, pp. 3–4.

to a third party that was unacceptable to the government of the country where the goods originated.

In May 1991 the Commission observed that unless strict extra-EC export controls were in place it would be difficult to eliminate intra-EC controls. The Commission instructed its staff 'to determine what measures should be adopted to enable the twelve Member States to apply effective rules on the control of exports to non-member countries' and to define 'the internal and external measures which must be taken to eliminate, by 31 December 1992, checks on intra-Community trade in double-use industrial products covered by the COCOM arrangements'.<sup>101</sup>

In January 1992 an *ad hoc* working group was established by the European Council to help prepare a final proposal for the Regulation. The proposal was completed on 31 August 1992.<sup>102</sup> During the next two years member states 'examined in microscopic detail the content of the lists and the various legal, timetable and voting questions raised by the regulation'.<sup>103</sup> This close scrutiny reflected the concern that the Commission was pushing into areas beyond its competence—foreign and security policy. The main areas of contention were the lists of technology and destinations subject to the Regulation. It was agreed that drawing up and amending such lists was a matter for the member states. The issue subsequently became how to bridge those parts of the export control system which fall under EU competence (the Regulation) and those which do not (the equipment and destination lists).

On 14 June 1994 it was agreed that the Regulation would be accompanied by a joint action decision taken in the context of Article J.3 of the Maastricht Treaty.<sup>104</sup> The joint action decision includes the list of destinations and the list of dual-use goods to which the Regulation will apply.<sup>105</sup>

Implementing the Regulation will take three years from March 1995, during which time EU states will modify national regulations and procedures and the Commission will develop the procedures needed to meet its commitments under the Regulation. The Commission will monitor the implementation of the Regulation as well as developing a system for information exchange between the members.

<sup>101</sup> Commission of the European Communities, 'The Single Market of 1993 and strategic products and technologies which are not intended specifically for military purposes', *Press Release*, Brussels, 29 May 1991.

<sup>102</sup> Commission of the European Communities, 'Proposal for a Council Regulation (EEC) on the control of exports of certain dual-use goods and technologies and of certain nuclear products and technologies', document no. COM(92) 317 final (Office for Official Publications of the European Communities: Luxembourg, 31 Aug. 1992).

<sup>103</sup> Taylor, T. and Cornish, P., 'The Single European Market and strategic export controls', Paper presented to the Economic and Scientific Research Council (ESRC) Conference on the Single European Market, Exeter University, 8–11 Sep. 1994, pp. 13–14.

<sup>104</sup> The Regulation draws its authority from Article 113 of the 1957 Treaty of Rome, which allows for amendment by a qualified majority of the member states. See Courades Allebeck, A., in Wulf (note 96), chapter 26, section II, pp. 214–17. By making the equipment and country lists subject to the common foreign and security policy, amendments will be impossible without the unanimous consent of the member states—giving each member a veto.

<sup>105</sup> Eavis, in Thurlow (note 98). Interestingly, the destination list contains 'friendly' countries which will be eligible for simplified licensing procedures rather than countries which will be subject to more rigorous controls.

During the negotiation of the Regulation several countries proposed follow-on discussions on measures which could in time lead to the further harmonization of national practices within the EU—in particular, a single set of export licences and a common set of administrative licensing procedures. The preamble to the Regulation refers to it as the first step in establishing a common system for export control. It therefore seems certain that the Regulation is not the final word on the issue of EU export controls.

## VI. The follow-on to COCOM

The COCOM regime and embargo formally ended on 31 March 1994. However, when the decision to end COCOM was taken, the members of the regime announced their intention to develop a follow-on regime. While the decision to end COCOM was announced at the high-level meeting of 16 November 1993, informal discussions about the process were initiated by the USA in mid-1993.<sup>106</sup> This was an open-ended commitment to try to develop a new multilateral control regime, and when the decision was taken it was not known what the mandate, structure or terms of reference of the regime would be. The regime still has no title and was initially referred to simply as the ‘new forum’, but an early decision was made that it should not exercise overlapping jurisdiction with NBC export control regimes.<sup>107</sup> Its primary aim will be to integrate conventional weapons and certain high technologies into the multilateral non-proliferation agenda.

There is widespread agreement among governments that, unlike NBC weapons, conventional arms transfers can have positive or negative effects depending on the specific circumstances of the transfer.

In common with the other regimes, decision making in the new forum will be carried out on a national basis. The forum will aim at establishing a mechanism for regular exchange of information and consultation regarding conventional arms and certain high-technology products.<sup>108</sup>

Development of the new regime was the responsibility of the states which were COCOM members at the time the decision was taken.<sup>109</sup> From the outset there were close consultations with the group of Fully Co-operating Countries which were not formal members of COCOM—Austria, Finland, Ireland, New Zealand, Sweden and Switzerland. Initially outside the *ad hoc* working

<sup>106</sup> Prepared Statement on *The Renewal of the Export Administration Act*, from Lynn Davis, Under Secretary for International Security Affairs, to the Subcommittee on International Finance and Monetary Policy, Senate Committee on Banking, Housing and Urban Affairs, 24 Feb. 1994.

<sup>107</sup> US Arms Control and Disarmament Agency, *Annual Report to Congress* (US Government Printing Office: Washington, DC, 28 Mar. 1994), p. 41.

<sup>108</sup> Royal Ministry of Foreign Affairs, Norway, *Fortsatt forhandlingar om nytt multilateralt regime for eksportkontroll* [Continued negotiations on a new multilateral regime for export control], Press Release nr. 246/94, 22 Dec. 1994 (in Norwegian).

<sup>109</sup> Three *ad hoc* working groups were established to examine: (a) whether guidelines for the new forum could be developed; and (b) the coverage of the forum in terms of equipment and technology; and (c) the administrative arrangements by which the forum would operate. *UK Policy on Weapons Proliferation and Control in the Post-Cold War Era*, Minutes of Evidence, House of Commons Foreign Affairs Committee, 7 July 1994, p. 23.

groups, these countries were invited to participate in the discussion of the new forum in March 1994. In addition, there was close consultation between several COCOM members and the Russian Foreign Ministry.

The initiative to end the COCOM embargo and establish a new forum came from the United States, with France in particular expressing doubts about the wisdom of such a step. Russia has moved to establish export regulations on the items of most concern to former COCOM members—NBC and ballistic missile-related technologies. However, it is not clear that Russia can implement these regulations in transfers between Russia and the other newly independent states of the former Soviet Union. These countries have not established effective systems for export regulation. Under these conditions, ending COCOM restrictions on Russia was, it was argued, premature.

In the USA the decision to press for the dissolution of COCOM and the perceived need for a follow-on regime reflect some of the cross-pressures operating on export control policy. The path set for the gradual removal of COCOM restrictions through a phased programme tailored to the different characteristics and pace of change in the former Warsaw Treaty Organization (WTO) was overwhelmed by ideological arguments in favour of modifying export regulations together with certain issues specific to US–Russian and US–Chinese relations.

The underpinning for the approach of the Clinton Administration to export control is the belief that the development of democracy and market economies are intimately entwined and mutually reinforcing. Furthermore, the existence of insecurity around the world is connected with the lack of democracy and capitalism. These ideas were at the centre of the strategy presented in September 1993 by National Security Adviser Anthony Lake as the organizing principle for US foreign policy during the Clinton Administration. According to Lake, ‘throughout the cold war we contained a global threat to market democracies. Now we should seek to enlarge their reach’.<sup>110</sup> The strategy had four components, each related to democracy and market economies: (a) to strengthen existing market democracies; (b) to foster and consolidate new democracies and market economies especially in states of special significance; (c) to counter aggression by states hostile to democracy and free markets; and (d) to help democracy and market economics take root in areas of humanitarian concern.

COCOM was seen as an obstacle to the development of market economies in Russia and China—states of special significance—and the issue of US export regulations was raised by both countries in bilateral discussions.<sup>111</sup> The US Department of Defense (DOD) Planning Guidance for fiscal years 1994–99 named preventing the re-emergence of a new rival or coalition of

<sup>110</sup> Lake, A., ‘From containment to enlargement’, Address at the School of Advanced International Studies, Johns Hopkins University, Washington, DC, 21 Sep. 1993. In one week in Sep. 1993, speeches referring to these 4 goals were made by: Secretary of State Warren Christopher, at Columbia University in New York; Anthony Lake, at Johns Hopkins University in Baltimore, Md.; and Madeleine K. Albright, at the National Defense University in Washington, DC.

<sup>111</sup> When they met in Vancouver, Canada, in Apr. 1993, President Yeltsin raised the issue of COCOM directly with President Clinton. US–Chinese relations are discussed in chapter 11 in this volume.

rivals that pose a threat to the order of the former Soviet Union as the first priority for US policy, and it is likely that maintaining COCOM at least as far as the newly independent states of the former Soviet Union are concerned had its supporters within the DOD.<sup>112</sup> However, William Perry, Deputy Secretary of Defense in November 1993 and later elevated to Secretary of Defense, publicly advocated ending the COCOM embargo on those controlled items seen to obstruct conversion of the Russian defence industry to civilian production.<sup>113</sup>

The US objective was to replace COCOM with a regime that 'promotes transparency and responsibility in arms and sensitive dual-use trade to countries and regions of instability'.<sup>114</sup> However, when the decision to end COCOM was taken in 1993, no specific US proposal for a successor regime had been prepared. The preference for developing regime guidelines together with probable regime partners was a conscious decision of the US Administration and reflected the desire for a very broad participation of supplier states ideally going beyond the membership of existing multilateral regimes.

At a summit meeting in Washington in September 1994, President Boris Yeltsin and President Clinton were unable to reach agreement on whether or not Russia met the conditions required for entry. Yeltsin observed that agreement had been reached 'in principle' by which Russia would fulfil its existing obligations regarding supplies to Iran but would sign no new agreements. Clinton underlined that any agreement depended on further investigation of the scope and content of Russia's existing obligations to Iran.<sup>115</sup>

At their meeting in the Hague on 21–22 December 1994, the countries discussing the new forum were unable to resolve the issue of whether or not Russia should be invited to join the regime as a founding member. Negotiations in the Working Group on Guidelines (under the chairmanship of Norway) and the Working Group on Lists (under the chairmanship of Germany) were scheduled to continue in Canberra, Australia, in February 1995. At an informal meeting in Carcassonne, France, on 18–19 March 1995, EU foreign

<sup>112</sup> Jervis, R., 'International primacy: is the game worth the candle?', *International Security*, vol. 17, no. 4 (spring 1993); and Layne, C., 'The unipolar illusion: why new great powers will rise', *International Security*, vol. 17, no. 4 (spring 1993). The changing position of the DOD is described in congressional testimony by Dr Mitchel Wallerstein, Deputy Assistant Secretary of Defense for Counterproliferation Policy, *Export Control and High Technology*, Hearing before the Subcommittee on Technology, Environment and Aviation of the Committee on Science, Space and Technology, US House of Representatives (US Government Printing Office: Washington, DC, 24 May 1994).

<sup>113</sup> Perry, W. J., *Soviet Defense Conversion: Problems and Opportunities* (Center for International Security and Arms Control, Stanford University: Stanford, Calif., 1992). Perry also co-authored a report proposing the integration of existing technology denial regimes into a single regime dealing with NBC technology, ballistic missiles and advanced conventional technologies of concern. Carter, A. B., Perry, W. J. and Steinbrunner, J. D., *A New Concept of Co-operative Security*, Brookings Occasional Papers (Brookings Institution: Washington, DC, 1992), p. 63. The practical obstacles to such a proposal are examined in Spector, L. and Foran, V., *Preventing Weapons Proliferation: Should the Regimes be Combined?* (Stanley Foundation: Muscatine, Iowa, Oct. 1992).

<sup>114</sup> Testimony of Barry Carter, Acting Undersecretary for Export Administration, Bureau of Export Administration, Department of Commerce to the Senate Committee on Banking, Housing and Urban Affairs, Subcommittee on International Finance and Monetary Policy, 24 Feb. 1994. Moreover, transparency was considered to require advance notification of transfers rather than information about deliveries. Moodie, M., 'Constraining conventional arms transfers', *The Arms Trade: Problems and Prospects in the Post Cold-War World*, Special Issue of the *Annals of the American Academy of Political and Social Science*, vol. 535 (Sep. 1994), p. 139.

<sup>115</sup> White House Press Conference, 29 Sep. 1994.

ministers suggested issuing an invitation to Russia to join the discussions of a follow-on forum.<sup>116</sup>

## VII. Schools of opinion on export controls

The spectrum of opinion on the goals and utility of export control measures is very broad. At least the following nine strands can be identified in the literature on export control—although in many cases the boundaries between the arguments are not watertight and it is possible to accept several of them.

### **Export controls are acts of political discrimination**

This argument suggests that multilateral export control regimes have become an element in the reordering of international political relationships after the cold war. At a minimum, the emergence of multilateral export control regimes symbolizes that order.<sup>117</sup>

Multilateral export controls belong to the group of arms control measures variously called ‘the coercive approach’,<sup>118</sup> ‘the containment approach’<sup>119</sup> and ‘the competitive approach’.<sup>120</sup> Regime membership is not universal, and both some advocates and some critics see export controls as acts of political discrimination.

Multilateral regimes rest on national laws and regulations whose implementation is discriminatory since some exports are approved and others are not. The abolition of multilateral regimes would thus not end discrimination.<sup>121</sup> The issue is what should be the basis for discrimination.

An extreme position suggests that the basis for discrimination is race or culture. Brahma Chellaney has suggested that the Australia Group, the NSG, the MTCR and COCOM are or were ‘a surreptitious club of white countries, many former colonial powers that employed their superior military strength derived from industrial and technological advantage to subdue the world’s most ancient civilizations’.<sup>122</sup>

Another extreme view is held by Lise Hartman, who sees the MTCR as an instrument of power politics in their most raw form. According to Hartman

<sup>116</sup> *Atlantic News*, 22 Mar. 1995, P. 1.

<sup>117</sup> Subrahmanyam, K., ‘Export controls and the North-South controversy’, *Washington Quarterly*, vol. 16 (spring 1993); and Leventhal, P., ‘Why bother plugging export leaks?’, *Orbis*, vol. 36, no. 2 (spring 1992), p. 168.

<sup>118</sup> US Congress, Office of Technology Assessment (note 48), p. 31.

<sup>119</sup> Butfoy, A., ‘The evolving framework for arms control’, *Australian Journal of International Affairs*, vol. 48, no. 1 (May 1994).

<sup>120</sup> Daalder, I., ‘The future of arms control’, *Survival*, vol. 34, no. 1 (spring 1992).

<sup>121</sup> In fact, the process of bargaining and compromise between members during regime formation and amendment may blunt national control measures. For example, US national nuclear export controls are more detailed and restrictive than obligations under the NSG. *Nuclear Nonproliferation: Export Licensing Procedures for Dual-Use Items Need to be Strengthened*; GAO/NSIAD-94-119 (US General Accounting Office: Washington, DC, Apr. 1994). Equally, US national controls on missile-related technology transfers are more restrictive than the MTCR Guidelines.

<sup>122</sup> Chellaney, B., ‘An Indian critique of US export controls’, *Orbis*, vol. 38, no. 3 (summer 1994), p. 443.

‘the point of the matter is for the US to say to potential proliferators “whether it’s in your interest to do this or not is your problem, but it is not in the US interest, and the US is going to do absolutely everything within its power to punish you unless you come to agree with it”’.<sup>123</sup>

Membership of the regimes is not closed. Moreover, few of the existing members share the characteristics described by Chellaney. The accession of new members—such as Argentina and South Africa—further invalidates his description. Hartman’s position is not shared across the US Government, let alone across all regime members. However, the principles and norms underpinning multilateral regimes are a legitimate area of enquiry.

The Australia Group is backed by a statement from all its members that they will not develop, produce or deploy chemical or biological weapons;<sup>124</sup> the norm in this case is clearly against weapon possession. The nuclear weapon states defined in Article IX.3 of the NPT all intend to maintain their status, and members of the MTCR reserve the right to deploy missiles controlled under the regime. In the NSG and MTCR, therefore, outlawing possession of these capabilities is not a group norm, but only an opposition to their further spread. The defence of the state by conventional armed forces is, in most countries, seen as an obligation of government. Therefore, there is no normative or principled objection to the further spread of conventional arms. Rather, it is the nature of their deployment and use which is subject to regulation.

### **Export controls are a subordinate part of force planning**

During the cold war COCOM was seen as useful in denying the Soviet Union and its allies given technologies until they were no longer critical to the military posture of the countries operating the controls. After the cold war this line of argument has been put forward in the United States in relation to the Middle East in the wake of the 1991 Gulf War against Iraq.<sup>125</sup>

The purpose of the MTCR would be to delay the introduction of missiles by a potential adversary until after theatre or local area ballistic missile defences have been developed and deployed. The argument could also be applied to nuclear and chemical weapons in the context of efforts to develop effective counter-force options.

This approach has not been put officially to any of the current export control regimes. However, it has been discussed within NATO which, after the ministerial meeting in Istanbul on 9 June 1994, released the Alliance Policy Framework on Proliferation of Weapons of Mass Destruction.<sup>126</sup> Responding to the

<sup>123</sup> Hartman, J. L., ‘Controlling the proliferation of missiles’, eds S. Feldman and A. Levite, *Arms Control and the New Middle East Security Environment* (Jaffee Center for Strategic Studies: Tel Aviv, 1994), p. 221.

<sup>124</sup> Through participation in the CWC and the BWC, respectively.

<sup>125</sup> Statement of Janne Nolan to the Hearing on *Arms Trade and Nonproliferation in the Middle East*, Subcommittee on Technology and National Security of the Joint Economic Committee, Congress of the United States, 13 Mar. 1992 (US Government Printing Office: Washington, DC, 1992).

<sup>126</sup> NATO Press Release M-NAC-1(94)45, 9 June 1994. See also the discussion of counter-proliferation in chapter 16 in this volume. Some have suggested that the UN take up the issue of force planning and export control as an element of peace enforcement. See, for example, Wallerstein, M. and Granger

political dimension of non-proliferation could also include using the Partnership for Peace (PFP) framework to discuss issues related to export control.

Keith Krause has argued that, as military technologies age and are superseded by new capabilities in the inventories of the countries which developed them, their diffusion is inevitable.<sup>127</sup> Krause also makes a direct link between vertical and horizontal proliferation through the argument that controlling horizontal technology transfers would be easier if there was a cap on military technology development in the major centres of innovation—Russia, the USA and countries of Western Europe.<sup>128</sup>

### **Export controls prevent economic development**

None of the export control regimes has economic objectives according to its mandate. Nevertheless, in some cases this argument is blended together with that made above about political discrimination.<sup>129</sup> According to this argument, preventing economic development is a deliberate policy of countries operating export controls. The goal of the regimes is to preserve the relative economic advantages of regime members against challenges from the countries which are the targets of export controls.

Advocates of this position would underline that membership of the Australia Group, the MTCR and COCOM is virtually identical with membership of the OECD. Discussions within the OECD Development Assistance Committee (DAC) of possible linkages between overseas development assistance and the security policies of aid recipient countries add to the suspicion in a few countries about the use of multilateral economic measures as a lever to bring about political changes.

This argument has become less persuasive as the number of independent centres of technology development has multiplied. The list of technologies over which the current members of the export control groups have monopoly control is becoming shorter and shorter. Moreover, the further internationalization of industrial production taking place in various forms is likely to erode the validity of this argument. As indicated by table 15.1, of the countries of East and South-East Asia only Japan currently participates in multilateral export control regimes. In 1992 the Government of Japan founded a Security Export Control Committee within the Ministry of International Trade and Industry (MITI). One of the tasks of the Committee was to consider how Japan could

Morgan, M., 'Controlling the high-technology militarization of the developing world', eds W. T. Wander and E. H. Arnett, *The Proliferation of Advanced Weaponry: Technology, Motivations and Responses* (American Association for the Advancement of Science (AAAS): Washington, DC, 1992), pp. 285–99.

<sup>127</sup> Krause, K., *Arms and the State: Patterns of Military Production and Trade* (Cambridge University Press: Cambridge, 1992).

<sup>128</sup> Krause, K., 'Post-Helsinki conventional arms control: the qualitative dimension', *Arms Control*, vol. 12, no. 2 (Sep. 1991), pp. 211–30. Vertical proliferation here means the qualitative improvement of weapons in the inventory of a given state through its indigenous effort. Horizontal proliferation is the spread of weapons or capabilities from state to state. However, this definition is not absolute since no country is technologically self-sufficient: at some point almost all weapon programmes—including those of the USA and the former Soviet Union—involve foreign ideas, materials or components.

<sup>129</sup> For example, in Chellaney (note 122).

contribute to strengthening international export control regimes. With this in mind, Japan sponsored regional discussions aimed at developing the consciousness of Asian countries about export controls.<sup>130</sup> These discussions have consisted of a series of workshops and visits by Japanese delegations to countries in East and South-East Asia as well as the Asian states which were formerly part of the USSR. Only officials in South Korea and, to a lesser extent, Singapore showed a detailed knowledge of export control administrative procedures. Moreover, the general reaction to the notion of restrictions on exports of dual-use technology was cool in countries which regard export promotion as an important aspect of national economic policy.<sup>131</sup>

Within multilateral export control regimes there is a tendency towards de-control of transfers between the regime members of those items that are the object of control when transferred to non-members. In the European Union this tendency is reflected in the elimination of formal licensing requirements between members and sometimes a presumption to approve licence applications to certain non-members. There is a broad trend towards removing barriers to free trade in an effort to stimulate economic growth, and trade promotion has become a more important foreign policy goal. As President Clinton has expressed it, efforts to achieve non-proliferation should not prevent the removal of 'outdated controls that unfairly burden legitimate commerce and unduly restrain growth and opportunity all over the world'.<sup>132</sup>

In designing export controls, governments are keen to avoid any measures that would inhibit legitimate trade. Even for countries such as Iraq, end-use conditions, monitoring and transparency measures are being developed to operate parallel with export regulations in order to prepare for the lifting of general trade sanctions.<sup>133</sup>

Some authors argue that closer ties between individuals involved in research and manufacturing not only promote economic development but also bring about political changes more effectively than export controls.<sup>134</sup> Stephen Flank has suggested that 'the United States should encourage technology transfer and development abroad (with exceptions for pariahs) in order to: reward reluctant regimes and domestic constituencies within those regimes; demonstrate the value of full membership of the international community; and wean potentially civilian technologies away from their dependence on allies like nuclear or military programmes'.<sup>135</sup>

<sup>130</sup> Anthony, I. *et al.*, in *SIPRI Yearbook 1994* (note 5), chapter 13, p. 490.

<sup>131</sup> Ministry of Foreign Affairs, Japan, *Asian Seminar on Export Controls for International Security*, 25–27 Oct. 1993; Ministry of Foreign Affairs, Japan, *Export Control Seminar for the NIS Countries*, 7–11 Mar. 1994.

<sup>132</sup> Speech to the United Nations, 27 Sep. 1993, quoted in Davis, Z., 'Devolution of the nonproliferation regime? United States and European export control policies in the post cold war era', Paper presented to the seminar on the European Arms Trade and the EU, Centre for Defence Studies, London, 17–18 Jan. 1994.

<sup>133</sup> See also the section on UNSCOM in chapter 19 in this volume.

<sup>134</sup> This argument was accepted by the Clinton Administration during the debate about whether China should be subject to sanctions of various kinds as a result of its policies towards the export of nuclear materials, chemical agents and ballistic missiles.

<sup>135</sup> Flank, S., 'Nonproliferation policy: a quintet for two violas?', *Nonproliferation Review*, vol. 1, no. 3 (spring/summer 1994), p. 77.

### **Export controls cannot compete with the pace and complexity of technology transfer**

Much of the literature on export controls has underlined the formidable obstacles governments face in defining and implementing export control measures. According to these arguments, under prevailing conditions technology diffusion is inevitable and unstoppable.

Some argue that the lists which form the basis of technology denial regimes can never capture all of the materials, equipment or know-how which would need to be denied in order to ensure non-proliferation.<sup>136</sup> Industrial programmes consist of five stages: basic research, applied research, development, production and distribution. As each multilateral export control regime develops lists tailored to a given stage in this process of acquisition, countries which seek specific capabilities redirect their efforts to a point in the process where the materials, goods or know-how are available.

As a result, the more successful export controls are, the more they will encourage indigenous design and development programmes in countries targeted by such controls.<sup>137</sup> To succeed, export controls would have to cover the full acquisition cycle, including basic raw materials and human knowledge. Efforts to develop administrative mechanisms for preventing the Soviet Union from gaining access to scientific and technical information in the 1980s ran up against both practical and legal/constitutional barriers.<sup>138</sup>

A variation on this argument is that the pace of technology change will always be faster than the pace of harmonization in export regulations. As the multilateral regimes all rest on national laws, implementation of regime guidelines involves harmonizing approaches to criminal justice—a major exercise in comparative law. Governments have different views on what rights the state possesses *vis-à-vis* its citizens and companies.<sup>139</sup>

### **Export controls cannot overcome political barriers**

In the debate on export control there are two prevailing forms of political barriers to successful multilateral export control. First, it is argued that members of the regime lack the political will to make export controls succeed. Second,

<sup>136</sup> Leventhal, P., 'Why bother plugging export leaks?', *Orbis*, vol. 36, no. 2 (spring 1992), p. 168.

<sup>137</sup> Stanley, R., 'Co-operation and control: the new approach to nuclear nonproliferation in Argentina and Brazil', *Arms Control*, vol. 13, no. 2 (Sep. 1992).

<sup>138</sup> Young, L., 'The control of government-sponsored technical information', *Science, Technology & Human Values*, vol. 10, no. 2 (spring 1985); and Ferguson, J. R., 'National security controls on technological knowledge: a constitutional perspective', *Science, Technology & Human Values*, vol. 10, no. 2 (spring 1985).

<sup>139</sup> Citizen participation laws or 'catch-all' laws provide a good example. The individual must demonstrate a good-faith effort to establish that he or she was engaged in a permitted activity. In some countries laws of this kind are considered to violate the principle that the prosecution must prove guilt. Nevertheless, some governments have taken this step or are examining it. Nederlof, K. A., 'Intangible technology transfers: towards a new policy in the Netherlands?', eds S. Mataija and L. Bourque, *Proliferation and International Security: Converging Roles of Verification, Confidence-Building and Peacekeeping* (Centre for International and Strategic Studies, York University: Toronto, 1993).

it is argued that none of the current export control regimes include all suppliers of the given technology whose proliferation they seek to control.

According to the first line of argument even the active proponents of multilateral export control have never made non-proliferation their central foreign and security policy goal. As a result, whenever there has been a clash between competing policy objectives, non-proliferation has been accorded a relatively low priority. This argument has most often been made in the United States in respect of its policy towards China, Israel and Pakistan.<sup>140</sup>

According to the second line of argument, a regime which does not include all of the potential sources of supply will damage the political and economic interests of the members without achieving its objective of preventing proliferation. Under these conditions it has become difficult for governments to obtain support for national export controls without making at least a good-faith effort to achieve multilateral support.<sup>141</sup>

This argument is most often made in the case of China, which is not a member of any multilateral export control organization or regime and which exports nuclear and chemical technologies as well as ballistic missiles.<sup>142</sup> In the future China, which has invested consistently if at a low level in defence research and development (R&D), will be able to offer many other military technologies for export. As noted above, none of the industrialized countries of East and South-East Asia other than Japan belongs to any of the current regimes. Other countries which have production capabilities in one or more related area also stand outside existing multilateral export control groups. However, some—such as Brazil and South Africa—are seeking to join one or more of the regimes.

With the dissolution of the former Soviet Union, Gary Bertsch and Igor Khripunov have observed that ‘the successor states of the former Soviet Union have inherited vast stockpiles of conventional and non-conventional weapons and the industrial and technological capacity to build more. Growing economic hardship and political instability in these states makes the threat of weapons proliferation very real’.<sup>143</sup> However, it should be noted that the substantive evidence that these countries have engaged in transfers of non-conventional weapons or associated dual-use items is weak.<sup>144</sup>

Of the newly independent states to have emerged on the territory of the former Soviet Union, only Russia is a member of any multilateral export control regime—although Ukraine has observer status within the NSG.

<sup>140</sup> US Congress, Office of Technology Assessment (note 48), pp. 26–27.

<sup>141</sup> Statement of Ashton Carter to the National Security News Service, Apr. 1994.

<sup>142</sup> Weixing Hu (note 43), pp. 3–10.

<sup>143</sup> Bertsch, G. K. and Khripunov, I., *The NIS and Weapon Proliferation: Promoting Export Controls in the Former Soviet Union* (Center for East–West Trade Policy, University of Georgia: Athens, Ga., May 1994).

<sup>144</sup> See also chapters 10 and 16 in this volume.

### **Cooperative arms control agreements will always be flawed**

Here it is assumed that the discovery of covert nuclear weapon programmes in Iraq and North Korea—both parties to the NPT—made it impossible to rely solely on forms of arms control that depend on cooperation.<sup>145</sup> Moreover, even where international agreements can define very elaborate and intrusive verification measures to reduce the need for mutual trust—such as those of the Chemical Weapons Convention—it remains to be seen how effectively they can be implemented.

As a result, Robert Rudney has suggested that export controls should be seen as one part of a ‘long-range co-operative strategy for retarding and even rolling back proliferation menaces’.<sup>146</sup> Under this strategy it would be necessary to integrate the following elements in pursuit of the objective of denying given capabilities to specified countries indefinitely: diplomacy, arms control and disarmament, export restrictions, sanctions, economic and military aid, coercive power projection forces, and passive and active defence measures.

### **Export controls are useful to buy time**

This school of thought accepts that a country determined to develop a given military capability cannot be prevented by export controls alone but could be prevented through cooperative, multilateral arms control agreements.<sup>147</sup> These agreements could be global or regional in character.

At the global level this argument could apply to the activities of the Australia Group in the framework of the ratification and implementation of the CWC. All Australia Group members accept the CWC as the primary instrument to prevent the development and deployment of chemical weapons. However, it is likely to be some time before the Convention enters into force and is implemented. Moreover, a further period of operation may then be required to evaluate the effectiveness of the CWC. Therefore, some Australia Group members have argued that the regime will be needed for a long period.<sup>148</sup>

At the regional level only Europe, through the Organization for Security and Co-operation in Europe (OSCE), and the Middle East, through the Middle East Multilateral Conference (MEMC) have intergovernmental conferences with a mandate to conduct arms control. Intergovernmental processes emerging elsewhere, notably in Asia, are an important element in addressing the security concerns of states. However, none has a mandate to pursue arms control.

<sup>145</sup> As Paul Leventhal has put it: ‘Iraq laid to rest the long-standing belief that a state will not join the NPT for the purpose of cheating’: Leventhal, P., ‘Nuclear export controls’, ed. J.-F. Rioux, *Limiting the Proliferation of Weapons: The Role of Supply-side Strategies* (Carleton University Press: Ottawa, 1992), p. 44. A similar point is made in Hofhansel, C., ‘From containment of communism to Saddam: the evolution of export control regimes’, *Arms Control*, vol. 14, no. 3 (Dec. 1993).

<sup>146</sup> Rudney, R., ‘Introduction’, eds R. Rudney and K. Bailey, *Proliferation and Export Controls* (National Institute for Public Policy, University of America: Lanham, 1993), p. xviii.

<sup>147</sup> Rioux (note 145), p. 173.

<sup>148</sup> See section III in this chapter.

In May 1991 President George Bush launched his Arms Control in the Middle East (ACME) initiative under which the five permanent members of the UN Security Council met to discuss ways to halt the proliferation of NBC weapons and ballistic missiles and to restrain the transfer of conventional arms to the region.<sup>149</sup> In Washington in May 1992, interim guidelines related to weapons of mass destruction were agreed which could, it was argued, help create the conditions under which peace talks could succeed.<sup>150</sup>

The Arms Control and Regional Security (ACRS) process was launched in January 1992 during the Moscow meeting of the MEMC.<sup>151</sup> However, few observers expect rapid progress towards an arms control agreement.<sup>152</sup> Export controls will have to be kept in place for a long time before the impact of co-operative agreements are felt.

### **Export controls impose political and economic costs which may deter certain programmes**

Countries could be prevented from developing a given military capability by export controls alone if acquisition is determined by more than the availability of a given technology. Access to technology does not automatically translate into the acquisition of a given military capability—a process which requires a separate decision. In making that decision a country will consider a range of factors, including the the associated economic and political costs.<sup>153</sup>

If the economic costs of acquiring a given capability can be made high enough and/or it is clear that going ahead with the programme will bring a widespread political condemnation, then the balance of decision may be tipped against proceeding.<sup>154</sup>

The effectiveness of export controls in interrupting given programmes is then a function of the efficiency with which controls are implemented. Weaknesses identified in implementation include lack of sufficient knowledge about the industrial capacities of companies involved in export trade, lack of border controls adequate to monitor and inspect cargoes leaving national territory, lack of adequate national intelligence about potential programmes of concern, lack of legal sanctions for violation of export regulations or sanctions that are

<sup>149</sup> *Fact Sheet on the Middle East Arms Control Initiative* (White House, Office of the Press Secretary: Washington, DC, 29 May 1991).

<sup>150</sup> Bartholemew, R., 'Progress in Middle East arms control', *US Department of State Dispatch*, 30 Mar. 1992, pp. 241–43; the Interim Guidelines Related to Weapons of Mass Destruction are reproduced in *SIPRI Yearbook 1993* (note 54), pp. 545–46.

<sup>151</sup> Feldman, S., 'Arresting weapons proliferation', *The Middle East Military Balance 1992–93* (Jaffee Center for Strategic Studies: Tel Aviv, 1993), pp. 93–119.

<sup>152</sup> Levite, A., 'Concluding remarks', in Feldman and Levite (note 123). Of the countries participating in the peace process, Syria has not attended the meetings of the ACRS and refuses to do so until the status of the Golan Heights has been determined. Other countries which would be important factors in regional arms control—notably Iraq—are not part of the peace process at all. See also Eisendorf, R., in *SIPRI Yearbook 1994* (note 5), chapter 3; and chapter 5 in this volume on the Middle East peace process.

<sup>153</sup> These are by no means the only factors to be considered. The primary restraint on proliferation is the fact that most governments have no wish to acquire the weapon concerned.

<sup>154</sup> Karp, A., 'Controlling weapons proliferation: the role of export controls', *Journal of Strategic Studies*, vol. 16, no. 1 (Mar. 1993).

too mild to constitute a deterrent to potential criminals.<sup>155</sup> Through joint activities and domestic measures, regime members have made efforts to improve the efficiency of national regulations.

### **Export controls meet domestic political needs of regime members**

Describing nuclear arms control negotiations between the former superpowers, Joseph Nye has written 'arms control reassures the publics in Western democracies'.<sup>156</sup> A similar point can be made about multilateral export controls.

Over the past few years both governments and non-government sources have published data to suggest that India, Iraq, Israel, North Korea and Pakistan have moved towards or, in one or two cases, over the threshold separating nuclear weapon states from non-nuclear weapon states. Approximately two dozen countries are mentioned as having or pursuing a CW capability.<sup>157</sup> The number periodically mentioned for states which may possess or be developing BW is only about a dozen, while approximately 25 countries are listed as possessing and, in some cases, developing and/or producing ballistic missiles.

In the face of these data, governments find it difficult to sit on their hands when asked what they are doing to address the possible negative consequences that might stem from these developments.

Some export controls have also been motivated by domestic political factors of a different kind. In the wake of revelations about the involvement of citizens, companies or even government agencies in specific programmes or countries of concern, powerful political constituencies may form behind export control initiatives. Alternatively, governments may engage in discussions of export controls to head off the formation or blunt the effectiveness of such constituencies.

In these arguments, whether or not measures adopted have an impact on proliferation is not the central point.

## **VIII. Conclusions**

For observers, the evolution of multilateral export regimes looks slow and painful. This chapter underlines some of the similarities and differences in the current multilateral efforts to control exports which make it inevitable that it should be so.

In each regime, decision making and implementation are national and not transnational. The regimes carry only as much authority as their members are prepared to assign them. Even within the European Union, governments have

<sup>155</sup> Wolf, R., 'West European policy responses to future European security challenges', *Challenges and Responses to Future European Security: British, French and German Perspectives* (European Strategy Group: London, Mar. 1993), pp. 163–65.

<sup>156</sup> Nye, J., 'Arms control after the cold war', *Foreign Affairs*, vol. 68, no. 5 (winter 1989–90), p. 44.

<sup>157</sup> See chapter 10 in this volume.

stressed the intergovernmental nature of their activities. The submission of a degree of sovereignty is voluntary, and a partner may take back its sovereignty without penalty.

Developing national policies on export control is a complex process. Each state has to balance four different and sometimes competing areas of public policy: defence policy, economic policy, foreign and security policy, and techno-industrial policy. At the national level those responsible for each area of public policy are likely to have a different view of what is appropriate in a national export control system. One would expect national positions on export control to be highly differentiated when compared. Moreover, since each national position is the product of compromise, when it is brought into a multi-lateral regime the flexibility of national representatives in discussing changes with one another is further limited. Changes need to be explained to constituencies at home. At the same time, institutional actors—such as Ministries of Defence or Ministries of Commerce—may form alliances across national boundaries.

Creating organizations to which governments would cede sovereignty would involve a long discussion of form and procedure, if it could be achieved at all. During that time the substantive issue—which created a demand for the regime in the first place—would be neglected. However, the current approach institutionalizes the influence of governments which are responsible to domestic constituencies that are not constant factors. In the absence of detailed regime rules and operating procedures, national elections or shifts in power within regime member states can disrupt or even defeat the regime.

In developing guidelines, the regimes concentrate on harmonization and consensus building. Once they have reached consensus, governments have a degree of responsibility not only to domestic constituencies but also to each other.<sup>158</sup> Governments must trust the regime partners to make a good-faith effort to implement regime guidelines. As a result, regime membership does not reflect economic, constitutional or geographical factors as much as whether the governments have a common formulation of the problem to be addressed. Some countries continue to be suspicious of the true purpose of export controls. Russia, for example, has expressed the fear that by entering export control regimes it will be subject to pressure from the USA to ‘curtail its cooperation with “third countries” in areas where it can offer strong competition to American exporters’.<sup>159</sup>

This question of trust and common formulation has created special problems in adapting to recent international changes. The end of the cold war offers the chance to cooperate with new states and enlarge the group of partners in non-proliferation efforts. However, under present political circumstances, can potential new partners be trusted to act in good faith? If so, do they have the technical and administrative capacity to be effective regime participants?

<sup>158</sup> An early discussion of this feature of regimes is contained in Ruggie, J. G., ‘International responses to technology’, *International Organization*, vol. 29 (summer 1975).

<sup>159</sup> Strokan, S., ‘Arms exports will be more difficult’, *Moscow News*, 18–24 Mar. 1994, p. 11.

Some of the administrative arrangements associated with regimes are converging. Annual or regular plenary meetings of officials have emerged as useful means of pursuing a general dialogue and information exchange. Similarly, the use of a rotating chairman for each of the regimes has offered an efficient and low-cost administrative device. The chairman can also coordinate *ad hoc* groups to perform useful fact-finding missions on behalf of the regime. However, the pattern of evolution of the regimes is unlikely to be the same, as there are important differences between them.

### **Differences between the regimes**

There are some fundamental differences between the approaches taken by the multilateral export control regimes. Some stem from the historical circumstances under which the regimes were created. When the NSG was formed the NPT was already in existence and in force. When the Australia Group was formed the CWC was not open for signature, while there is still no global convention dealing with conventional arms or ballistic missiles. Moreover, the fact that the implications of proliferation are different for the various military technologies also has an impact on the regimes.

These differences are reflected in the fact that decisions are made according to different criteria within the different military technology groups. Decisions about permitting an export can be weapon-based, recipient-based or capability-based.

*Weapon-based controls* apply to NBC weapons. There are no circumstances under which the transfer of a complete weapon could be consistent with the relevant export control regimes. However, as noted above, there are problems in applying the precise definition of a chemical weapon in the CWC for the purposes of export controls because the definition includes systems for the delivery of chemical agent. The link between the Australia Group and the MTCR is therefore important. This is equally true with regard to the BWC: the international concern regarding the spread of BW capabilities in the 1990s supports the view that current export controls in isolation are unlikely to be a strong barrier to the acquisition of biological weapons.<sup>160</sup>

*Recipient-based controls* using an embargo and a country list are used when export controls are part of a strategy of confrontation—as was the case during the cold war. COCOM was one of a range of policies and practices intended to weaken the military capability of ideologically defined enemies. With the end of COCOM there is currently no such regime.

*Capability-based controls* are linked to the activity undertaken rather than the countries in which those activities occur. As a result regimes rarely target countries *per se* but seek to prevent or interrupt specific programmes of concern. Regulations may permit exports of a controlled item if the recipient is a non-military user or if the supplier is satisfied that the item will be put to a

<sup>160</sup> US Congress, Office of Technology Assessment (OTA), *Export Controls and Nonproliferation Policy*, OTA-ISS-596 (US Government Printing Office: Washington, DC, May 1994), p. 23.

non-military use. Such regulations are needed for dual-use goods to prevent their use in military programmes while permitting the export of the same item for use in civilian programmes. Capability-based regulations may also permit the transfer of controlled military items where the military posture and conduct of the recipient is considered reasonable and sufficient.

The theoretical distinction between recipient-based and capability-based controls is clear. However, making this distinction in practice is a problem since the proliferation events to which regime members object are the responsibilities of governments whose legitimacy is usually not in question.<sup>161</sup>

In the absence of mechanisms to verify end use for dual-use items the distinction also breaks down unless the supplier assumes that the documentation associated with exports is always accurate. Moreover, while verification through national technical means (NTM) may demonstrate that a dual-use item *is* being misapplied, government cooperation of some form is probably needed to determine that a dual-use item *is not* being misapplied. This is one of the factors underpinning the current interest among governments in transparency in armaments. Government willingness to put information about military activities into the public domain is increasingly being seen as an objective demonstration of a commitment to avoid undesirable forms of proliferation. As such it has a confidence-building effect.

Transparency measures are most advanced in the area of conventional weapons. However, drawing distinctions between recipient-based and capability-based controls is impossible for conventional weapons in the absence of an accepted code of military conduct. As noted above, the right of possession of conventional arms for the purpose of national defence is undisputed, and most governments therefore see no need to abstain from arms transfers. The issue is to determine the circumstances under which such transfers have negative effects. Without any agreed standard against which to measure behaviour it is difficult to determine when a state goes beyond maintaining an inventory of equipment which is reasonable and sufficient for defence.

<sup>161</sup> In 1994 this problem was underlined by the decision of the USA to recognize the Government of North Korea as a direct consequence of an objectionable proliferation event.